STATE OF CALIFORNIA-DEPARTMENT OF TRANSPORTATION

STRUCTURAL QUANTITY SURVEY AND MARGINAL ESTIMATE

DS-D 0019 (REV. 02/11/08)

RECEIVED IN ESTIMATE SECTION BY	DATE
QUANTITIES BY	DATE
R. Washington / S. Morimoto	5/14/2012
CHECKED BY	DATE
G. Reyes-Gutierrez/ R. Melko	05/14/12
REVISED BY	DATE
S. Morimoto	05/30/12
APPROVED BY	DATE

CHARGE	EXPENDITURE AUTHORIZATION	BRIDGE NUMBER		LENGTH	
6	06-2HT201	X	EFIS 0612000329-1		

BRIDGE		WIDTH	LONG SPAN	SPANS
Retaining Wall #1,3,5		na	na	na

DISTRICT	COUNTY	ROUTE	PM	TYPE	DEPTH	SKEW	DESIGN SECTION
6	Fre	99		Type 1 RW	na	na	6

CODE	CONTRACT ITEMS	UNIT	SUPERSTRUCTURE			SUBSTRUCTURE			OTHER ELEMENTS-Retaining Wall 1,3,5			TOTALS	PRICE	AMOUNT
			QUANTITY	CHECK	* USE	QUANTITY	CHECK	* USE	QUANTITY	CHECK	* USE	* USE		
	STRUCTURE EXCAVATION (RETAINING WALL)	CY							3,149	3,041				
	STRUCTURE BACKFILL (RETAINING WALL)	CY							1,927	1,981				
	BAR REINFORCING STEEL (RETAINING WALL)	LB							89,415	89,773				
	STRUCTURAL CONCRETE, RETAINING WALL	CY							694	696				
	ARCHITECTURAL TREATMENT	SQFT							2,322	2,272				
	PREPARE AND STAIN CONCRETE	SQFT							738	739.3				
	MINOR CONCRETE (GUTTER)	LF							244	244				
	METAL PICKET RAILING	LF							801	801				
	RETAINING WALL REMOVAL (PORTION)	CY							105	102				

QUANTITY PER GIRDER					
	LENGTH OF PC PS GIRDER				
	CUBIC YARDS PCC				
	POUNDS BAR REINFORCING				
	POUNDS PRESTRESS STEEL				
	NUMBER OF GIRDERS				

*** ESTIMATING BRANCH TO INPUT**

MOBILIZATION %	$
SUB TOTAL-CONTRACT ITEMS	
CONTINGENCIES %	
SUPPLEMENTAL WORK	
TOTAL	$
FOR BUDGET PURPOSES-SAY	$

STATE OF CALIFORNIA-DEPARTMENT OF TRANSPORTATION

CONCRETE SUMMARY

DS-D-0050 (REV. 02/11/08)

Estimating Section to Forward to RE Pending File

STRUCTURE	BRIDGE NUMBER	EA	DISTRICT	COUNTY	ROUTE	CALCULATED BY	CHECKED BY
Retaining Wall #1,3,5	X	06-2HT201	6	Fre	99	R. Washington / S. Morimoto	G. Reyes-Gutierrez/ R. Melko

SUPERSTRUCTURE	ESTIMATE	CHECK	**SUBSTRUCTURE**	ESTIMATE	CHECK	**RETAINING WALLS**	ESTIMATE	CHECK
Top Slab			Abutments			Struct Conc. Retaining Wall	691	693
Overhang								
Bottom Slab								
Bottom Slab Flares								
Girders - Interior								
Girders - Exterior			Wingwalls			**TOTAL CY (RW)**	691	693
Girder Flares								
Fillets						**OTHER**	ESTIMATE	CHECK
Closure Pour						Approach Slab (Type)		
						Slope Paving		
End Diaphragms			Columns - Piers			PEDESTAL	2.78	2.76
Caps								
			TOTAL CY (SUB)	0	0	**TOTAL CY (OTHER)**	2.78	2.76
			Footings			**BREAKDOWN BY CONCRETE TYPES**		
Hinges							ESTIMATE	CHECK
						Struct Conc. Bridge Footing		
						Struct Concrete Bridge		
						Struct Conc. Retaining Wall	691	693
						Struct Conc., Other	2.78	2.76
TOTAL CY (SUPER)	0	0	**FOOTING TOTAL CY**	0	0	**TOTAL CY**	694	696

STATE OF CALIFORNIA-DEPARTMENT OF TRANSPORTATION

SUMMARY-STRUCTURE EXCAVATION AND STRUCTURE BACKFILL

DS-D-0022 (REV. 02/11/08)

Estimating Section to forward to RE Pending File

STRUCTURE				BRIDGE NUMBER	DATE	CALCULATED BY
Retaining Wall #1,3,5					5/14/2012	S. Morimoto
DISTRICT	COUNTY	ROUTE	EA NUMBER			CHECKED BY
6	Fre	99	06-2HT201			G. Reyes-Gutierrez

LOCATION	STRUCTURE EXCAVATION		STRUCTURE BACKFILL		PERVIOUS BACKFILL MATERIAL	
	ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK
Retaining Wall #1,3,5	3149	3041	1927	1981		
TOTAL CY	**3149**	**3041**	**1927**	**1981**	**0**	**0**

STATE OF CALIFORNIA-DEPARTMENT OF TRANSPORTATION

BAR REINFORCING SUMMARY

Estimating Section to Forward to RE Pending File

STRUCTURE	BRIDGE NO.	EA	DISTRICT	COUNTY	ROUTE	CALCULATED BY	CHECKED BY
RW 1,3,5	0	0	6	Fresno	99	Rachel Washington	G. Reyes-Gutierrez

BAR SIZE		SUPERSTRUCTURE		SUBSTRUCTURE		RETAINING WALLS			
		ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK
3									
4						3 662	3 702		
5						38 810	39 107		
6						26 829	26 761		
7						9 855	9 925		
8									
9						8 505	8 518		
10									
11									
14									
18									
	INT DIAPHRAGM								
	RAIL								
99	WALL								
	HINGE								
SUBTOTAL						87 662	88 013		
2% SPLICES						1 753	1 760		
TOTAL						89 415	89 773		

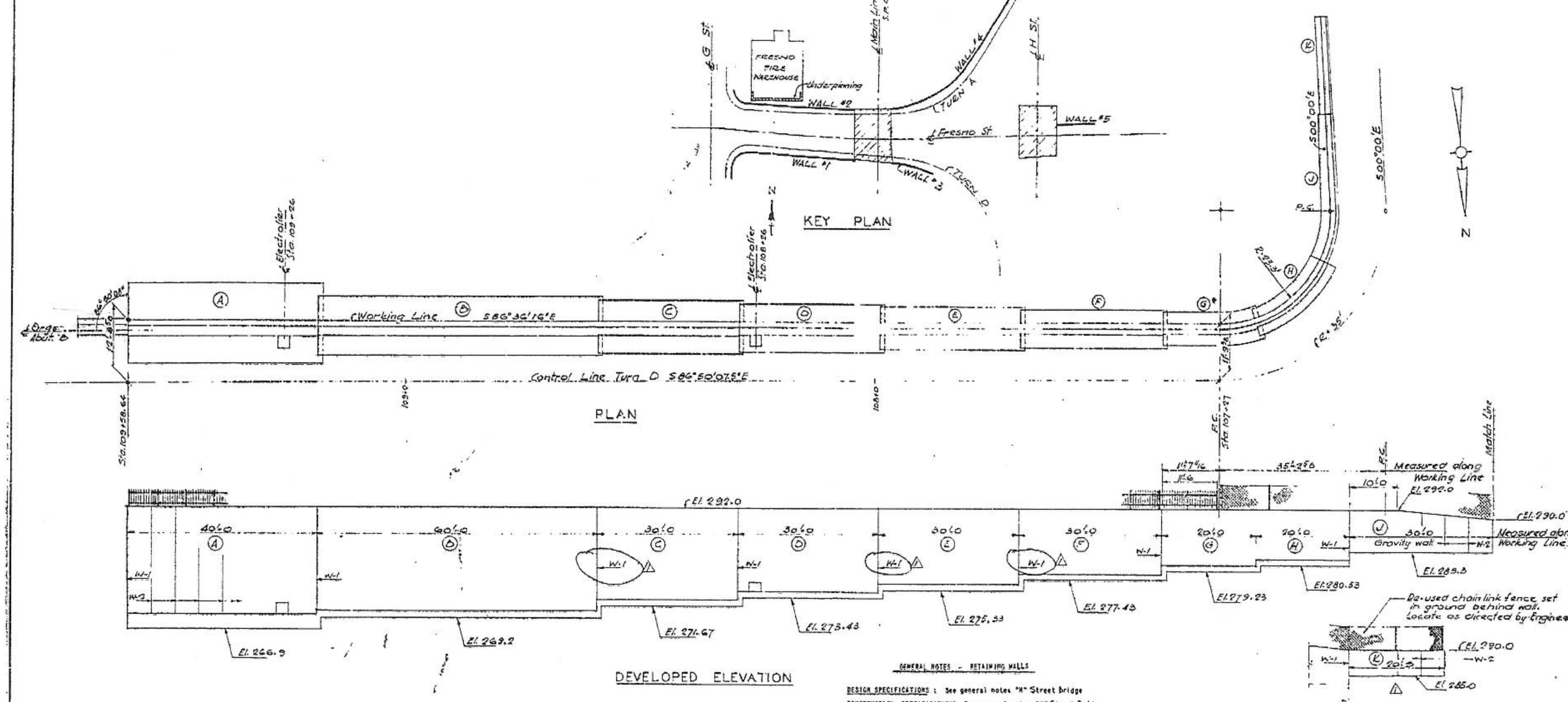
NOTES

QUANTITIES

EA 06-2HT201

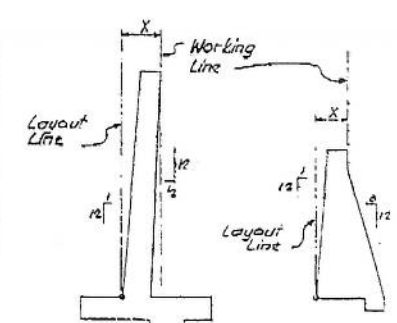
RETAINING WALL 1,3,5

MAY 30, 2012



DEVELOPED ELEVATION

PANEL	DIM "X"	H
A	2'-10	—
B	2'-9⅞	22'
C	2'-7	20'
D	2'-5⅝	18'
E	2'-3½	16'
F	2'-1⅜	14'
G	1'-11⅝	12'
H	1'-10⅞	10'
J	1'-8¾ max. 1'-6¾ min.	Grav. wall
K	1'-5	Grav. wall



PANELS (A) - (H) PANELS (J) - (K)
TYPICAL SECTIONS

GENERAL NOTES - RETAINING WALLS

DESIGN SPECIFICATIONS : See general notes "H" Street Bridge

CONSTRUCTION SPECIFICATIONS: See general notes "H" Street Bridge

DESIGN LOADING : A.A.S.H.O., H20-S16-44 or Cooper E-72

CONCRETE: See general notes "H" Street Bridge

REINFORCEMENT: See general note: "H" Street Bridge

CONSTRUCTION JOINTS: No construction joints shall be used except by permission of the Engineer or as shown on the plans.

FOUNDATION: Footing designed for: max toe pressure 5000 p.s.f. earth 120 p.c.f., equivalent fluid pressure 36 p.s.f.

DATUM: See general notes "H" Street Bridge

NOTE
For details and reinforcement see Sh. S-16 & S-17

420-206

CITY OF FRESNO
DEPARTMENT OF PUBLIC WORKS

FRESNO ST. UNDERPASS RECONSTRUCTION
RETAINING WALLS
WALL 1 - PLAN & ELEVATION

AS BUILT

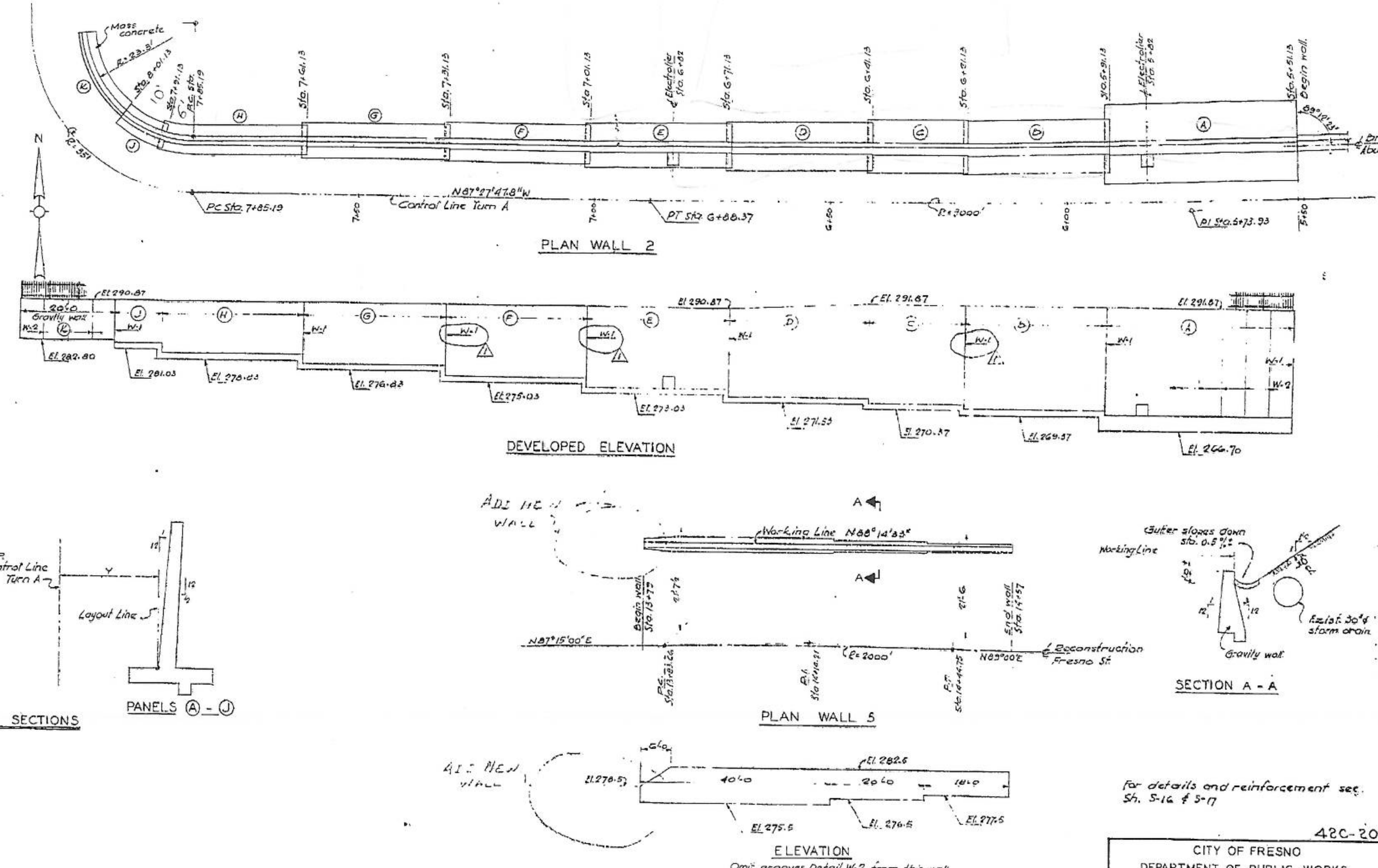
REV.	DESCRIPTION	DATE	BY
1	AS BUILT	9-66	KJN

DE LEUW, CATHER & COMPANY ENGINEERS SAN FRANCISCO, CALIFORNIA
SHEET NO. S-12
SCALE: 1"=10'-0 except as noted
DATE: JAN 1965

15-E-1207

DESIGNED BY E. J. HICKS
DRAWN BY E. J. HICKS
CHECKED BY S. H. STUDZINSKI
APPROVED BY G. A. LEWIS

Station	"Y"	"H"	Panel
5+51.13	9'-10 3/8		A
61.13	9'-10 1/4		A
71.13	9'-10		A
81.13	9'-9 1/2		A
91.13	9'-9 3/8		A
	9'-10 3/8	20'	B
6+01.13	9'-10 1/8		B
11.13	9'-9 3/4		B
21.13	9'-9 3/8		B
	9'-10 3/8		C
31.13	9'-10		C
41.13	9'-9 3/4	20'	C
	9'-10 5/8	18'	D
51.13	9'-10		D
61.13	9'-9 1/2		D
71.13	9'-8 7/8	18'	D
	9'-10 3/8	16'	E
81.13	9'-9 3/4		E
91.13	9'-9 1/4		E
7+01.13	9'-8 1/2	16'	E
	9'-10 1/2	14'	F
11.13	9'-9 7/8		F
21.13	9'-9 1/4		F
31.13	9'-8 3/4	14'	F
	9'-10 1/2	12'	G
41.13	9'-9 3/4		G
51.13	9'-9 1/8		G
61.13	9'-8 3/8	12'	G
	9'-10 3/8	10'	H
71.13	9'-9 3/4		H
81.13	9'-9 1/8		H
91.13	9'-8 3/8	10'	H
	9'-10 1/2	8'	J
8+01.13	9'-9 7/8	8'	J



For details and reinforcement see Sh. S-16 & S-17

42C-206

CITY OF FRESNO
DEPARTMENT OF PUBLIC WORKS

FRESNO ST. UNDERPASS RECONSTRUCTION
RETAINING WALLS
WALLS 2 & 5 - PLAN & ELEVATION

AS BUILT

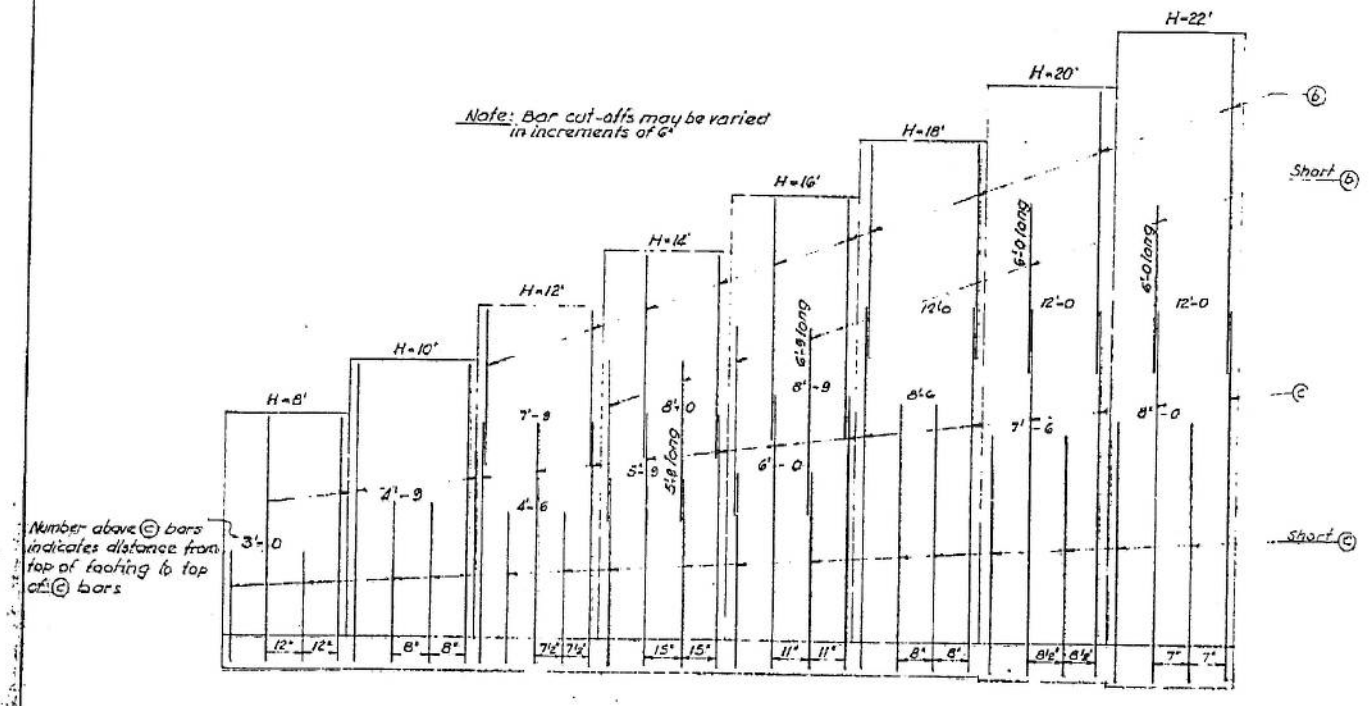
Rev	Description	Date	By
1	AS BUILT	9-7-66	E.J.H.

DE LEUW, CATHER & COMPANY ENGINEERS SAN FRANCISCO, CALIFORNIA

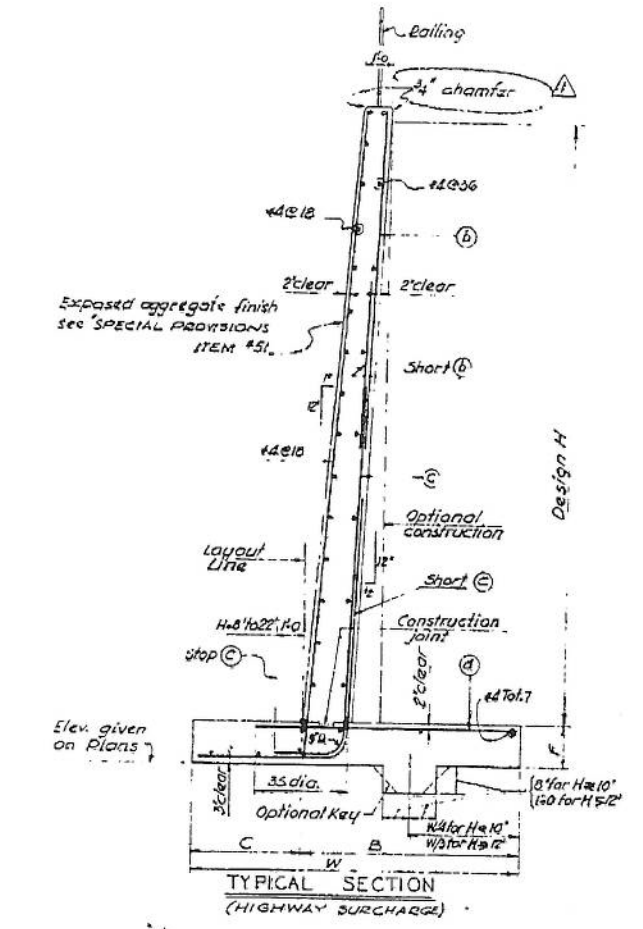
Sheet No. S-13
Scale 1" = 10' except as noted
Date: JAN 1965

DESIGNED BY E.J. HICKS
DRAWN BY E.J. HICKS
CHECKED BY S.H. STUDZINSKI
APPROVED BY D.A. LEWIS

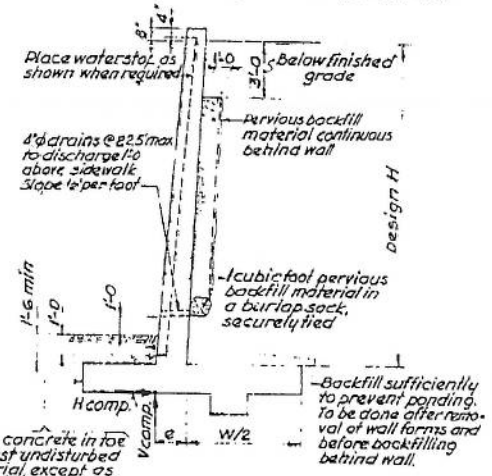
15 - E - 1208



ELEVATION



TYPICAL SECTION
(HIGHWAY SURCHARGE)



TYPICAL SECTION

TABLE OF REINFORCING STEEL DIMENSIONS & DATA								
Design H		8'	10'	12'	14'	16'	18'	20'	22'
W		5'-2	6'-2	7'-2	8'-0	9'-0	10'-0	11'-0	12'-0
C		1'-8	2'-0	2'-4	2'-8	3'-0	3'-4	3'-8	4'-0
B		3'-6	4'-2	4'-10	5'-4	6'-0	6'-8	7'-4	8'-0
F Spread Ftg.		1'-2	1'-2	1'-2	1'-2	1'-2	1'-2	1'-4	1'-6
ⓑ bars				#5@30	#5@15	#5@11	#6@24	#7@17	#7@14
ⓒ bars		#5@12	#5@8	#6@7½	#10@15	#10@11	#10@8	#11@8½	#11@7
ⓓ bars		#4@12	#4@8	#5@7½	#9@15	#9@11	#9@8	#10@8½	#10@7
2' level surcharge (Highway)	H Comp. k	2.2	3.1	4.1	5.2	6.5	8.0	9.7	11.6
	V Comp. k	5.6	7.7	10.2	12.6	15.6	19.0	24.9	27.3
	Toe Pr. k/sf	2.2	2.5	2.8	3.1	3.5	3.6	4.1	4.6

DESIGNED BY S.H. STUDZINSKI
DRAWN BY A. LIIKANE
CHECKED BY S.H. STUDZINSKI
APPROVED BY B.A. LEWIS

AS BUILT

Rev.	DESCRIPTION	DATE	BY
1	AS BUILT	9-66	E.K.

NOTE
Retaining wall details are based on State of California, Division of Highways Standards.

42C-206

CITY OF FRESNO
DEPARTMENT OF PUBLIC WORKS.

FRESNO ST UNDERPASS RECONSTRUCTION

RETAINING WALLS

SECTIONS & DETAILS - SHEET 1

DIL LEUW, CATHER & COMPANY
ENGINEERS
SAN FRANCISCO, CALIFORNIA

SHEET NO.: S-15
SCALE: NO SCALE
DATE: JAN 1966

15-E-12.11

ARCHITECTURAL TREATMENT, RETAINING WALL 1,3,5

	BEGINNING STATION	ENDING STATION	Length (lf)	Height (ft)	TOP OF SIDEWALK (ft)	TOP OF SIDEWALK - 1 FOOT (ft)	TOP OF Wall Elevation (ft) @ Beginning Sta	HEIGHT (ft) AT BEGINNING STATION	AREA (sqft)
RETAINING WALL 1	12 + 00	15 + 75.84	375.84	0.66666667			282.06		250.56
			375.84				269.92		
									251 sqft
				TOP OF SIDEWALK - 1 FOOT					
RETAINING WALL 3	11 + 17.46	11 + 60.00	42.54	8	284.52	283.52	287.9	4.38	206.11
	11 + 60.00	12 + 55.00	95.00	10	283.5	282.5	287.81	5.31	596.13
	12 + 55.00	12 + 63.83	8.83	12	281.38	280.38	287.62	7.24	64.68
	12 + 63.83		***146.37***		281.19	280.19	287.6	7.41	
									867 sqft
RETAINING WALL 5	13 + 32.96	13 + 60.00	27.04	12	279.13	278.13	287.6	9.47	277.97
	13 + 60.00	14 + 30.21	70.21	16	278.05	277.05	288.14	11.09	926.42
	14 + 30.21		***97.25***		275.24	274.24	289.54	15.3	
									1204 sqft
									TOTAL RW 1,3,5 = **2322 sqft**

ARCHITECTURAL TREATMENT, RETAINING WALL 2,4,6

RETAINING WALL 2	11 + 99.38	15 + 74.59	375.21	0.66666667			282.55		250.14
			375.21						
									250 sqft
RETAINING WALL 4	11 + 24	11 + 80	56.00	8.00	285.76	284.76	288.1	3.34	272.44
	11 + 80	12 + 56	76.00	10.00	282.71	281.71	288.1	6.39	562.40
	12 + 56	12 + 66	10.00	12.00	280.69	279.69	288.1	8.41	85.35
	12 + 66		***142.00***		280.44	279.44	288.1	8.66	
									920 sqft
RETAINING WALL 6	13 + 37.23	13 + 45	7.77	14.00	278.73	277.73	289.39	11.66	91.45
	13 + 45	14 + 00	55.00	16.00	278.54	277.54	289.42	11.88	715.00
	14 + 00	14 + 34.78	34.78	18.00	276.47	275.47	289.59	14.12	517.00
			97.55		275.09	274.09	289.7	15.61	
									1323 sqft
									TOTAL RW 2,4,6 = **2494 sqft**

MISCELLANEOUS ITEMS

	BEGINNING STATION	ENDING STATION
RETAINING WALL 1	12 + 00	15 + 75.84
RETAINING WALL 3	11 + 17.46	12 + 63.83
RETAINING WALL 5	13 + 32.96	14 + 30.21
RETAINING WALL 2	11 + 99.38	15 + 74.59
RETAINING WALL 4	11 + 24	12 + 66
RETAINING WALL 6	13 + 37.23	14 + 34.78

MISC #1 MINOR CONCRETE (GUTTER)

	BEGINNING STATION	ENDING STATION	LENGTH
RETAINING WALL 3	11 + 17.46	12 + 63.83	146.37
RETAINING WALL 5	13 + 32.96	14 + 30.21	97.25
	MINOR CONCRETE GUTTER =		243.6 LF

	BEGINNING STATION	ENDING STATION	LENGTH
RETAINING WALL 4	11 + 24	12 + 66	142
RETAINING WALL 6	13 + 37.23	14 + 34.78	97.55
	MINOR CONCRETE GUTTER =		239.6 LF

MISC #2 METAL PICKET RAILING

	BEGINNING STATION	ENDING STATION	LENGTH
TRANSITION BEFORE RW1	11 + 18	12 + 00	82
TRANSITION @ END RW1	15 + 75	16 + 75	100
RETAINING WALL 1	12 + 00	15 + 75.00	375
RETAINING WALL 3	11 + 17.46	12 + 63.83	146.37
RETAINING WALL 5	13 + 32.96	14 + 30.21	97.25
	METAL PICKET RAILING =		800.6 LF

	BEGINNING STATION	ENDING STATION	LENGTH
TRANSITION BEFORE RW2	11 + 50	11 + 99	49.38
TRANSITION @ END RW2	15 + 75	16 + 75	100
RETAINING WALL 2	11 + 99.38	15 + 75.00	375.62
RETAINING WALL 4	11 + 24	12 + 66	142
RETAINING WALL 6	13 + 37.23	14 + 34.78	97.55
	METAL PICKET RAILING =		764.550 LF

~~**MISC #3 CONCRETE BARRIER (TYPE 60D MODIFIED)**~~ DISTRICT ITEM

	~~BEGINNING STATION~~	~~ENDING STATION~~	~~LENGTH~~	
~~RETAINING WALL 1~~	~~12 + 00~~	~~15 + 75.84~~	~~375.84~~	
	~~CONCRETE BARRIER (TYPE 60D MODIFIED)=~~			~~375.84 LF~~

	~~BEGINNING STATION~~	~~ENDING STATION~~	~~LENGTH~~	
~~RETAINING WALL 2~~	~~11 + 99.38~~	~~15 + 74.59~~	~~375.21~~	
	~~CONCRETE BARRIER (TYPE 60D MODIFIED) =~~			~~375.21 LF~~

PREPARE AND STAIN CONCRETE, RETAINING WALL 1,3,5

	BEGINNING STATION	ENDING STATION	Length (lf)	AREA 1 (sqft)	AREA 2 (sqft)	AREA 3 (sqft)	AREA 4 (sqft)	AREA 5 (sqft)	AREA (sqft)
RETAINING WALL 3	11 + 17.46	12 + 63.83	146.37	44.73	49.60	54.56	60.39	65.17	274.45
								Retaining Wall #3 =	**274.5 sqft**
RETAINING WALL 5	13 + 32.96	14 + 30.21	97.25	71.03	81.79	92.79	103.39	114.29	463.29
								Retaining Wall #5 =	**463.3 sqft**

TOTAL RW 1,3,5 = 738 CY

STRUCTURAL CONCRETE, RETAINING WALL 1,3,5

	BEGINNING STATION	ENDING STATION	Length (lf)	Design H (ft)	Bottom of Ftg Elev (ft)	TOP OF Wall Elevation (ft) @ Beginning Sta	FOOTING HEIGHT (ft) "F"	FOOTING WIDTH (ft) "W"	Key Volume (cy)	Step Volume (cy)	BATTER WIDTH (1:24) (ft)	STEM CONCRETE (cy)	FOOTING CONCRETE (cy)	VOLUME (cy)
RETAINING WALL 1	12 + 00	12 + 40.00	40.00	10	272.5	282.06	1.33	7.58	1.81	0.56	1.33	13.78	14.98	31.13
	12 + 40	12 + 80.00	40.00	12	270.5	281.56	1.50	8.33	2.96	0.77	1.39	16.57	18.52	38.82
	12 + 80	13 + 20.00	40.00	14	268	281.16	1.67	9.58	2.96	0.71	1.45	19.75	23.71	47.13
	13 + 20	13 + 40.00	20.00	14	266	279.92	1.67	9.58	1.48	0.35	1.49	10.94	11.85	24.64
	13 + 40	13 + 60.00	20.00	14	265	279.12	1.67	9.58	1.48	0.00	1.50	11.17	11.85	24.50
	13 + 60	13 + 80.00	20.00	16	265	278.32	1.67	10.75	1.48	1.06	1.47	10.29	13.30	26.13
	13 + 80	14 + 40.00	60.00	16	262.33	277.52	1.67	10.75	4.44	0.27	1.51	34.40	39.89	79.01
	14 + 40	15 + 00.00	60.00	14	261.66	275.12	1.67	9.58	4.44	0.94	1.44	28.73	35.56	69.68
	15 + 00	15 + 40.00	40.00	14	259	272.72	1.67	9.58	2.96		1.47	20.57	23.71	47.25
	15 + 40	15 + 75.84	35.84	12	259	271.12	1.50	8.33	2.65		1.42	16.08	16.59	35.32
	15 + 75.84		***375.84***			269.92			***26.69***			***182.28***	***209.98***	
												Retaining Wall #1 =		**423.6 CY**
RETAINING WALL 3	11 + 17.46	11 + 60.00	42.54	8	278.5	287.9	1.33	7.25	1.81	0.67	1.33	14.75	15.23	32.46
	11 + 60.00	12 + 55.00	95.00	10	276	287.81	1.33	7.58	2.47	0.63	1.43	44.43	35.58	83.11
	12 + 55.00	12 + 63.83	8.83	12	273.75	287.62	1.50	8.33	0.65		1.52	5.08	4.09	9.83
	12 + 63.83		***146.37***			287.6			***4.93***			***64.26***	***54.89***	
												Retaining Wall #3 =		**125.4 CY**
RETAINING WALL 5	13 + 32.96	13 + 60.00	27.04	12	273.75	287.6	1.50	8.33	2.00	1.00	1.53	15.96	12.52	31.49
	13 + 60.00	14 + 30.21	70.21	16	270.5	288.14	1.67	10.75	5.20		1.69	58.40	46.68	110.29
	14 + 30.21		***97.25***			289.54			***7.20***			***74.36***	***59.20***	
												Retaining Wall #5 =		**141.8 CY**

TOTAL RW 1,3,5 = 691 CY

High Speed Train

Retaining Wall #1,3,5

Bar Reinforcing Summary

EA: 06-2HT201
Estimator- Rachel Washington
Checker: Gloria Reyes-Gutierrez

BAR REINFORCING CHECK (CONT.)

STRUCTURE	BRIDGE NO.	EA	CALCULATED BY	CHECKED BY
RW 1,3,5	0	0	Rachel Washington	G. Reyes-Gutierrez

BAR SIZE		RETAINING WALLS					
		ESTIMATE	CHECK	% DIFFERENCE	ESTIMATE	CHECK	% DIFFERENCE
3							
4		3 662	3 702	-1.1%			
5		38 810	39 107	-0.8%			
6		26 829	26 761	0.3%			
7		9 855	9 925	-0.7%			
8							
9		8 505	8 518	-0.2%			
10							
11							
14							
18							
	INT DIAPHRAGM						
	RAIL						
99	WALL						
	HINGE						

STATE OF CALIFORNIA-DEPARTMENT OF TRANSPORTATION

BAR REINFORCING SUMMARY

Estimating Section to Forward to RE Pending File

STRUCTURE	BRIDGE NO.	EA	DISTRICT	COUNTY	ROUTE	CALCULATED BY	CHECKED BY
RW 1,3,5	0	0	6	Fresno	99	Rachel Washington	G. Reyes-Gutierrez

BAR SIZE		SUPERSTRUCTURE		SUBSTRUCTURE		RETAINING WALLS			
		ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK
3									
4						3 662	3 702		
5						38 810	39 107		
6						26 829	26 761		
7						9 855	9 925		
8									
9						8 505	8 518		
10									
11									
14									
18									
	INT DIAPHRAGM								
	RAIL								
99	WALL								
	HINGE								
SUBTOTAL						87 662	88 013		
2% SPLICES						1 753	1 760		
TOTAL						89 415	89 773		

NOTES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 1 OF 11

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Retaining Wall # 1 Summary (see segments in below sheets)

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
Total # of Segments =		**10**												
Type 1 Retaining Wall Reinforcement Totals				0.0	2686.8	22975.9	11921.6	2356.8	0.0	1345.8	0.0	0.0	0.0	0.0

NOTE: For computing steel in Standard Retaining	TOTAL LENGTHS			0	2687	22976	11922	2357	0	1346	0	0	0	0
Wall from the charts, use 99 for size.	WT. PER FOOT			0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE			**0**	**1,795**	**23,964**	**17,906**	**4,817**	**0**	**4,576**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET			**0**	**1,795**	**23,964**	**17,906**	**4,817**	**0**	**4,576**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 2 OF 11

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Segment 1 — **STA 12+00 to 12+40**

H= 10

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6	100	15.00				1500.0							
602C	6	53	12.88				682.7							
501	5	41	9.63			394.7								
603C (none)														
502	5	4	39.67			158.7								
503	5	54	5.24			283.1								
604D	6	54	5.93				320.3							
504	5	8	39.67			317.4								
505	5	54	3.16			170.8								
506	5	6	39.67			238.0								
506S	5	6	39.67			238.0								
405T	4	6	39.67		238.0									
STEP														
507	5	6	7.25			43.5								
508	5	6	9.99			60.0								
NOTE: For computing steel in Standard Retaining	TOTAL LENGTHS			0	238	1904	2503	0	0	0	0	0	0	0
Wall from the charts, use 99 for size.	WT. PER FOOT			0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE			**0**	**159**	**1,986**	**3,760**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET			**0**	**159**	**1,986**	**3,760**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 3 OF 11

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 1		6	3591	6	0	0	0612000239-1
Segment 2		**STA 12+40 to 12+80**					
H= 12				TOTAL LENGTH - EACH SIZE			
ITEM	SIZE / NO. / LENGTH	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E												
602C #6 @9"	6 / 54 / 13.74				742.0							
501 #5@12"	5 / 40 / 10.16			406.3								
603C (none)												
502 #5 Tot 4	5 / 4 / 39.67			158.7								
503 #5@9"	5 / 54 / 5.79			312.8								
604D #6@9"	6 / 54 / 6.47				349.5							
504 #5@12"	5 / 10 / 39.67			396.7								
505 #5@9"	5 / 54 / 3.33			180.0								
506 #5@12"	5 / 6 / 39.67			238.0								
506S #5@18"	5 / 6 / 39.67			238.0								
405T #4@18"	4 / 6 / 39.67		238.0									
STEP												
507	5 / 8 / 8.00			64.0								
508	5 / 7 / 11.33			79.3								
TOTAL LENGTHS		0	238	2074	1092	0	0	0	0	0	0	0
WT. PER FOOT		0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE		**0**	**159**	**2,163**	**1,639**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET		**0**	**159**	**2,163**	**1,639**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Segment 3

STA 12+80 to 13+20

H= 14

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6						0.0							
602C #6 @7"	6	69	15.72				1084.7							
501 #5@12"	5	40	11.71			468.3								
603C (none)														
502 #5 Tot 4	5	4	39.67			158.7								
503 #5@7"	5	69	6.49			447.5								
604D #6@7"	6	69	7.80				537.9							
504 #5@12"	5	12	39.67			476.0								
505 #5@7"	5	69	3.83			264.5								
506 #5@12"	5	8	39.67			317.4								
506S #5@18"	5	7	39.67			277.7								
405T #4@18"	4	7	39.67		277.7									
STEP														
507	5	6	9.25			55.5								
508	5	7	10.67			74.7								
TOTAL LENGTHS				0	278	2540	1623	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**185**	**2,649**	**2,437**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**185**	**2,649**	**2,437**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			Richard Melko	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 5 OF 11

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 1		6	3591	6	0	0	0612000239-1

Segment 4 — **STA 13+20 to 13+40**

H= 14

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6						0.0							
602C #6 @7"	6	34	16.74				569.3							
501 #5@12"	5	20	12.69			253.7								
603C (none)														
502 #5 Tot 4	5	4	19.67			78.7								
503 #5@7"	5	34	6.44			219.1								
604D #6@7"	6	34	7.75				263.6							
504 #5@12"	5	12	19.67			236.0								
505 #5@7"	5	34	3.83			130.3								
506 #5@12"	5	8	19.67			157.4								
506S #5@18"	5	8	19.67			157.4								
405T #4@18"	4	8	19.67		157.4									
STEP														
507	5	6	9.25			55.5								
508	5	8	8.67			69.4								
TOTAL LENGTHS				0	157	1357	833	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**105**	**1,416**	**1,251**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**105**	**1,416**	**1,251**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
C. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 6 OF 11

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Segment 5 — **STA 13+40 to 13+60**

H= 14

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6						0.0							
602C #6 @7"	6	34	16.95				576.3							
501 #5@12"	5	20	12.89			257.7								
603C (none)														
502 #5 Tot 4	5	4	19.67			78.7								
503 #5@7"	5	34	6.44			218.8								
604D #6@7"	6	34	7.75				263.3							
504 #5@12"	5	12	19.67			236.0								
505 #5@7"	5	34	3.83			130.3								
506 #5@12"	5	8	19.67			157.4								
506S #5@18"	5	8	19.67			157.4								
405T #4@18"	4	8	19.67		157.4									

NOTE: For computing steel in Standard Retaining		No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
Wall from the charts, use 99 for size.	TOTAL LENGTHS	0	157	1236	840	0	0	0	0	0	0	0
	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE	**0**	**105**	**1,289**	**1,261**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET	**0**	**105**	**1,289**	**1,261**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Segment 6

STA 13+60 to 13+80

H= 16

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6						0.0							
702C #7 @6"	7	21	16.62					349.0						
501 #5@12"	5	20	12.09			241.7								
703C Short c bars	7	21	11.62					244.0						
502 #5 Tot 4	5	4	19.67			78.7								
503 #5@6"	5	40	7.14			285.4								
904D #9@6"	9	40	8.45							337.8				
504 #5@12"	5	12	19.67			236.0								
505 #5@9"	5	40	4.33			173.2								
506 #5@12"	5	8	19.67			157.4								
506S #5@18" Zone 1	5	4	19.67			78.7								
506S #5@12" Zone 2	5	6	19.67			118.0								
405T #4@18"	4	8	19.67		157.4									
STEP														
507	5	8	10.42			83.3								
508	5	9	12.01			108.1								
TOTAL LENGTHS				0	157	1561	0	593	0	338	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**105**	**1,628**	**0**	**1,212**	**0**	**1,149**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**105**	**1,628**	**0**	**1,212**	**0**	**1,149**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Segment 7

STA 13+80 to 14+40

H= 16

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6						0.0							
702C #7 @6"	7	60	17.73					1064.0						
501 #5@12"	5	60	13.16			789.4								
703C Short c bars	7	60	11.66					699.8						
502 #5 Tot 4	5	4	59.67			238.7								
503 #5@6"	5	120	7.09			850.8								
904D #9@6"	9	120	8.40							1008.0				
504 #5@12"	5	12	59.67			716.0								
505 #5@9"	5	119	4.33			515.6								
506 #5@12"	5	8	59.67			477.4								
506S #5@18" Zone 1	5	4	59.67			238.7								
506S #5@12" Zone 2	5	6	59.67			358.0								
405T #4@18"	4	8	59.67		477.4									
STEP														
507	5	4	10.42			41.7								
508	5	9	8.01			72.1								
TOTAL LENGTHS				0	477	4298	0	1764	0	1008	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**319**	**4,483**	**0**	**3,605**	**0**	**3,427**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**319**	**4,483**	**0**	**3,605**	**0**	**3,427**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Segment 8 — **STA 14+40 to 15+00**

H= 14

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C #6 @7"	6	103	15.43				1589.3							
501 #5@12"	5	60	11.43			685.6								
603C (none)														
502 #5 Tot 4	5	4	59.67			238.7								
503 #5@7"	5	103	6.50			669.1								
604D #6@7"	6	103	7.81				804.0							
504 #5@12"	5	12	59.67			716.0								
505 #5@7"	5	104	3.83			398.6								
506 #5@12"	5	8	59.67			477.4								
506S #5@18"	5	7	59.67			417.7								
405T #4@18"	4	7	59.67		417.7									
STEP														
507	5	8	9.25			74.0								
508	5	7	11.99			83.9								
TOTAL LENGTHS				0	418	3761	2393	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**279**	**3,923**	**3,595**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**279**	**3,923**	**3,595**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 10 OF 11

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Segment 9 — **STA 15+00 to 15+40**

H= 14

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C #6 @7"	6	69	16.12				1111.9							
501 #5@12"	5	40	12.09			483.6								
603C (none)														
502 #5 Tot 4	5	4	39.67			158.7								
503 #5@7"	5	69	6.47			446.3								
604D #6@7"	6	69	7.78				536.8							
504 #5@12"	5	12	39.67			476.0								
505 #5@7"	5	69	3.83			264.5								
506 #5@12"	5	8	39.67			317.4								
506S #5@18"	5	8	39.67			317.4								
405T #4@18"	4	8	39.67		317.4									

NOTE: For computing steel in Standard Retaining		No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
Wall from the charts, use 99 for size.	TOTAL LENGTHS	0	317	2464	1649	0	0	0	0	0	0	0
	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE	**0**	**212**	**2,570**	**2,476**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET	**0**	**212**	**2,570**	**2,476**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Segment 10 — **STA 15+40 to 15+75.84**

H= 12

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6						0.0							
602C #6 @9"	6	48	14.17				680.0							
501 #5@12"	5	36	10.69			384.7								
603C (none)														
502 #5 Tot 4	5	4	35.51			142.0								
503 #5@9"	5	48	5.77			276.8								
604D #6@9"	6	48	6.46				309.9							
504 #5@12"	5	10	35.51			355.1								
505 #5@9"	5	48	3.33			159.8								
506 #5@12"	5	6	35.51			213.1								
506S #5@18"	5	7	35.51			248.6								
405T #4@18"	4	7	35.51		248.6									
TOTAL LENGTHS				0	249	1780	990	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**166**	**1,857**	**1,487**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**166**	**1,857**	**1,487**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

ROUTE	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Segment 12

STA 15+00 to 15+40

	TOTAL LENGTH - EACH SIZE										
	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	Richard Melko	
CHECK	DATE			BUSINESS PHONE NUMBER	DATE
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	6	3591	6	0	0	0612000239-1

Segment 13

STA 15+40 to 15+75.84

H= 10

ITEM	SIZE	NO.	LENGTH	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
TOTAL LENGTHS				0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET				0	0	0	0	0	0	0	0	0	0	0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME		VERIFY
Rachel Washington	5/29/2012			Richard Melko		
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 1 OF 4

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 3	6	3591	6	0	0	0612000239-1

Retaining Wall # 3 Summary (see segments in below sheets)

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
Total # of Segments =		**3**												
Type 1 Retaining Wall Reinforcement Totals				0.0	977.2	6964.7	4456.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOTE: For computing steel in Standard Retaining		TOTAL LENGTHS		0	977	6965	4457	0	0	0	0	0	0	0
Wall from the charts, use 99 for size.		WT. PER FOOT		0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.		TOTAL WT. PER SIZE		**0**	**653**	**7,264**	**6,694**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
		TOTAL WT. PER SHEET		**0**	**653**	**7,264**	**6,694**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
	DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 3	6	3591	6	0	0	0612000239-1

Segment 1

STA 11+20 to 11+60

H= 8

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6	40	15.00				600.0							
602C #6 @9"	6	54	12.18				657.9							
501 #5@12"	5	40	9.02			360.7								
603C (none)														
502 #5 Tot 4	5	4	39.67			158.7								
503 #5@9"	5	54	5.00			270.0								
604D #6@9"	6	54	5.69				307.2							
504 #5@12"	5	8	39.67			317.4								
505 #5@9"	5	54	3.08			166.5								
506 #5@12"	5	6	39.67			238.0								
506S #5@18"	5	6	39.67			238.0								
405T #4@18"	4	6	39.67		238.0									
STEP														
507	5	8	6.92			55.3								
508	5	6	10.99			65.9								
TOTAL LENGTHS				0	238	1871	1565	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**159**	**1,951**	**2,351**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**159**	**1,951**	**2,351**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 3	6	3591	6	0	0	0612000239-1

Segment 2

STA 11+60 to 12+55

H= 10

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6						0.0							
602C #6 @9"	6	127	14.74				1872.0							
501 #5@12"	5	96	11.40			1094.4								
603C (none)														
502 #5 Tot 4	5	4	94.67			378.7								
503 #5@9"	5	127	5.15			654.1								
604D #6@9"	6	127	5.84				742.1							
504 #5@12"	5	8	94.67			757.4								
505 #5@9"	5	127	3.16			401.7								
506 #5@12"	5	6	94.67			568.0								
506S #5@18"	5	7	94.67			662.7								
405T #4@18"	4	7	94.67		662.7									
STEP														
507	5	6	6.92			41.5								
508	5	6	10.49			63.0								
TOTAL LENGTHS				0	663	4621	2614	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**443**	**4,820**	**3,926**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**443**	**4,820**	**3,926**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 3	6	3591	6	0	0	0612000239-1

Segment 3

STA 12+55 to 12+63.83

H= 12

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6						0.0							
602C #6 @9"	6	12	16.80				201.6							
501 #5@12"	5	9	13.20			118.8								
603C (none)														
502 #5 Tot 4	5	4	8.50			34.0								
503 #5@9"	5	12	5.64			67.7								
604D #6@9"	6	12	6.33				76.0							
504 #5@12"	5	10	8.50			85.0								
505 #5@9"	5	12	3.33			40.0								
506 #5@12"	5	6	8.50			51.0								
506S #5@18"	5	9	8.50			76.5								
405T #4@18"	4	9	8.50		76.5									

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
TOTAL LENGTHS	0	76	473	278	0	0	0	0	0	0	0
WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE	**0**	**51**	**493**	**417**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET	**0**	**51**	**493**	**417**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
	DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 3	6	3591	6	0	0	0612000239-1

Segment 4

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														
TOTAL LENGTHS				0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET				0	0	0	0	0	0	0	0	0	0	0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE		CHARGE		EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
	DIST	UNIT	DIST	UNIT		
Retaining Wall # 3	6	3591	6	0	0	0612000239-1

Segment 5

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														
TOTAL LENGTHS				0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET				0	0	0	0	0	0	0	0	0	0	0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	Richard Melko	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 3		6	3591	6	0	0	0612000239-1
Segment 6							

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														

NOTE: For computing steel in Standard Retaining												
Wall from the charts, use 99 for size.	TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
Show lb/ft to nearest pound.	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 3		6	3591	6	0	0	0612000239-1
Segment 7							

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														
NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.	TOTAL LENGTHS			0	0	0	0	0	0	0	0	0	0	0
	WT. PER FOOT			0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE			0	0	0	0	0	0	0	0	0	0	0
	TOTAL WT. PER SHEET			0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 9 OF 4

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 3	6	3591	6	0	0	0612000239-1

Segment 8

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														
TOTAL LENGTHS				0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET				0	0	0	0	0	0	0	0	0	0	0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE		CHARGE		EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
	DIST	UNIT	DIST	UNIT		
Retaining Wall # 3	6	3591	6	0	0	0612000239-1

Segment 9

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														
TOTAL LENGTHS				0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET				0	0	0	0	0	0	0	0	0	0	0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	Richard Melko	
CHECK	DATE			BUSINESS PHONE NUMBER	DATE
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 3	6	3591	6	0	0	0612000239-1
Segment 10						

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														

NOTE: For computing steel in Standard Retaining		No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
Wall from the charts, use 99 for size.	TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
Show lb/ft to nearest pound.	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 3	6	3591	6	0	0	0612000239-1

Segment 11

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														

		No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.	TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 01.10 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 3	6	3591	6	0	0	0612000239-1
Segment 12						

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			Richard Melko	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 3	6	3591	6	0	0	0612000239-1

Pedestal Rebar

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
#4 @ 6"	4	10	13.16		131.6									
#4 @ 6"	4	10	23.82		238.2									

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
TOTAL LENGTHS	0	370	0	0	0	0	0	0	0	0	0
WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE	**0**	**247**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET	**0**	**247**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY Rachel Washington	**DATE** 5/30/2012	**REMARKS**	IN CASE OF QUESTION CONTACT:	**NAME** Richard Melko	**VERIFY**
CHECK G. Reyes-Gutierrez	**DATE** 5/30/2012			**BUSINESS PHONE NUMBER** 916-227-0721	**DATE** 5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 5	6	3591	6	0	0	0612000239-1

Retaining Wall # 5 Summary (see segments in below sheets)

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
Total # of Segments =		**2**												
Type 1 Retaining Wall Reinforcement Totals				0.0	1078.9	7269.6	1484.0	2464.7	0.0	1155.6	0.0	0.0	0.0	0.0

NOTE: For computing steel in Standard Retaining	TOTAL LENGTHS	0	1079	7270	1484	2465	0	1156	0	0	0	0
Wall from the charts, use 99 for size.	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE	**0**	**721**	**7,582**	**2,229**	**5,038**	**0**	**3,929**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET	**0**	**721**	**7,582**	**2,229**	**5,038**	**0**	**3,929**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 5	6	3591	6	0	0	0612000239-1

Segment 1

STA 13+32.96 to 13+60

H= 12

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6	40	15.00				600.0							
602C #6 @9"	6	37	17.57				650.2							
501 #5@12"	5	28	13.96			390.8								
603C (none)														
502 #5 Tot 4	5	4	26.71			106.8								
503 #5@9"	5	38	5.63			213.9								
604D #6@9"	6	37	6.32				233.8							
504 #5@12"	5	10	26.71			267.1								
505 #5@9"	5	37	3.33			123.2								
506 #5@12"	5	6	26.71			160.2								
506S #5@18"	5	9	26.71			240.4								
405T #4@18"	4	9	26.71		240.4									
STEP														
507 #5@16"	5	8	8.00			64.0								
508 #5@16"	5	7	12.83			89.8								
TOTAL LENGTHS				0	240	1656	1484	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**161**	**1,727**	**2,229**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**161**	**1,727**	**2,229**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 5		6	3591	6	0	0	0612000239-1

Segment 2 — **STA 13+60 to 14+30.21**

H= 16

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E	6						0.0							
702C #7 @6"	7	71	22.85					1622.1						
501 #5@12"	5	71	18.07			1282.8								
703C Short c bars	7	71	11.87					842.6						
502 #5 Tot 4	5	4	69.88			279.5								
503 #5@6"	5	141	7.06			994.9								
904D #9@6"	9	141	8.20							1155.6				
504 #5@12"	5	12	69.88			838.5								
505 #5@9"	5	141	4.33			610.5								
506 #5@12"	5	8	69.88			559.0								
506S #5@18" Zone 1	5	6	69.88			419.3								
506S #5@12" Zone 2	5	9	69.88			628.9								
405T #4@18"	4	12	69.88		838.5									
TOTAL LENGTHS				0	839	5613	0	2465	0	1156	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**560**	**5,855**	**0**	**5,038**	**0**	**3,929**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**560**	**5,855**	**0**	**5,038**	**0**	**3,929**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 01.10 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 5	6	3591	6	0	0	0612000239-1

Segment 3

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
	DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 5	6	3591	6	0	0	0612000239-1
Segment 4						

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.												
	TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 5		6	3591	6	0	0	0612000239-1
Segment 5							

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														
TOTAL LENGTHS				0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET				0	0	0	0	0	0	0	0	0	0	0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
	DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 5	6	3591	6	0	0	0612000239-1

Segment 6

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														
TOTAL LENGTHS				0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET				0	0	0	0	0	0	0	0	0	0	0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	Richard Melko	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
	DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 5	6	3591	6	0	0	0612000239-1

Segment 7

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														
TOTAL LENGTHS				0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET				0	0	0	0	0	0	0	0	0	0	0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 5	6	3591	6	0	0	0612000239-1

Segment 8

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.		No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
	TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
	TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
G. Reyes-Gutierrez	5/29/2012			916-227-0721 / 5/29/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 5		6	3591	6	0	0	0612000239-1
Segment 9							

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														
TOTAL LENGTHS				0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET				0	0	0	0	0	0	0	0	0	0	0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
Rachel Washington	5/29/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 5	6	3591	6	0	0	0612000239-1

Segment 10

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 5	6	3591	6	0	0	0612000239-1

Segment 11

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

	SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 5	6	3591	6	0	0	0612000239-1
Segment 12						

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
601E														
602C														
501														
603C														
502														
503														
604D														
504														
505														
506														
506S														
405T														

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size.

Show lb/ft to nearest pound.

	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
TOTAL LENGTHS	0	0	0	0	0	0	0	0	0	0	0
WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE	0	0	0	0	0	0	0	0	0	0	0
TOTAL WT. PER SHEET	0	0	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
Rachel Washington	5/29/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
G. Reyes-Gutierrez	5/29/2012			916-227-0721	5/29/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91)

RW

PAGE 4 OF 3

	SOURCE		CHARGE		EXPENDITURE AUTHORIZATION	SPECIAL DES WHEN APPLICABLE
	DIST	UNIT	DIST	UNIT		
Retaining Wall # 5	6	3591	6	0	0	0612000239-1
Pedestal Rebar						

ITEM	SIZE	NO.	LENGTH	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
				TOTAL LENGTH - EACH SIZE										
#4 @ 6"	4	10	13.16		131.6									
#4 @ 6"	4	10	23.82		238.2									
NOTE: For computing steel in Standard Retaining	TOTAL LENGTHS			0	370	0	0	0	0	0	0	0	0	0
Wall from the charts, use 99 for size.	WT. PER FOOT			0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE			0	247	0	0	0	0	0	0	0	0	0
	TOTAL WT. PER SHEET			0	247	0	0	0	0	0	0	0	0	0

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME		VERIFY
Rachel Washington	5/30/2012			Richard Melko		
CHECK	DATE			BUSINESS PHONE NUMBER	DATE	
G. Reyes-Gutierrez	5/30/2012			916-227-0721	5/30/2012	

JOB STAMP

ITEM Rebar Quantities
LOCATION RW #1
CALC. BY Rachel Washington
CHK. BY
DATE 5-24-2012

FILE NO EA 06-2HT201
SEGREGATION YES NO

Segment (1) H=10'

12+00 to 12+40

H = 8.63' W = 7.58' B = 5.25' C = 2.33' L = 40'

2" = 0.167' 4" = 0.333' 9" = 0.75'
f = 1.33 3" = 0.25' X = 1.341

602C #6@9"

Bar Length = (8.63' - 0.167') + (1.33 - 0.25') = 9.543'

Hook = (2.33 + 1.341 - 0.333) = 3.338'

# of bars = (40 - 0.333') ÷ 0.75' = 52 + 1 = 53 bars

501 #5@12"

Bar Length = (8.63' + 1.33 - 0.333) = 9.627'

# of bars = (40 - 0.333') ÷ 1' = 40 + 1 = 41 bars

502 #5 Tot 4

Bar Length = (40 - 0.333') = 39.67'

# of bars = 4

503 #5@9"

Bar Length = (5.25 - 1.341 + 1.5 - 0.167) = 5.242'

# of bars = (40 - 0.333') ÷ 0.75' = 53 + 1 = 54 bars

JOB STAMP

ITEM Rebar Quantities
LOCATION RW#1
CALC. BY
CHK BY R. Washington

FILE NO EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-24-2012

Segment (1) H=10
L=40
ϕ#6 = 0.75" = 0.0625'

604d #6 @ 9" X = 1.341 (35 * 0.0625') = 2.19'

Bar Length = [(5.25 - 1.341 + 2.19')] - 0.167' = 5.932'

# of bars = (40 - 0.333) ÷ 0.75' = 53 + 1 = 54 bars

504 #5 @ 12"

Bar Length = (40 - 0.333') = 39.67'

# of bars = (5.25 - 1.341 - 0.167') ÷ 1' = (3+1)(2sets) = 8bar

505 #5 @ 9"

Bar Length = (2.33 + 1) - 0.167' = 3.163'

# of bars = (40 - 0.333') ÷ 0.75' = 53 + 1 = 54 bars

506 #5 @ 12"

Bar Length = (40 - 0.333) = 39.67'

# of bars = (2.33 - 0.167) ÷ 1' = 2 + 1 = 3 * 2 rows = 6 bars

506S #5 @ 18

Bar Length = (40 - 0.333) = 39.67'

# of bars = (8.63 - 0.333) ÷ 1.5' = 5 + 1 = 6 bars

JOB STAMP

ITEM Rebar Quantities
LOCATION RW #1
CALC. BY
CHK. BY R. Washington
FILE NO EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-24-2012

Segment (1) H = 10'

10" = 0.833' 16" = 1.33'

405T #4 @ 18"

Bar Length = (40 - 0.333) = 39.67'

# of bars = (8.63 - 0.333) ÷ 1.5 = 5 + 1 = 6 bars

601E #6 @ 10" x 15'-0"

Bar Length = 15'

# of bars = 8' ÷ 0.833' = 9 + 1 = 10 bars / per expansion joint

507 #5 @ 16" W = 7.58 H_{step} = 1.33 + 2 = 3.33

Bar length = (7.58 - 0.333) = 7.247'

# of bars = (3.33 - 0.333) ÷ 1.33 = (2 + 1)(2sets) = 6 bars

508 #5 $\sqcap^{2'-0"}$ @ 16"

Bar Length = 2[(3.33 - 0.333) + 2] = 9.994'

# of bars = [(7.58 - 0.333) ÷ 1.33] = 5 + 1 = 6 bars

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 1 OF 3

JOB STAMP

ITEM Rebar Quantities | FILE NO EA 06-2HT201

LOCATION RW #1 | SEGREGATION YES NO

CALC. BY | DATE

CHK. BY Rachel Washington | DATE 5-24-2012

Segment (2) H=12

12+40 to 12+80

H = 9.11' W = 8.33' B = 5.83' C = 2.50 L = 40'

602c #6 @ 9" 2" = 0.167' 4" = 0.333' 9" = 0.75'
F = 1.50 X = 1.380 3" = 0.25'

Bar Length = (9.11 - 0.167') + (1.50 - 0.25') = 10.193'

Hook = (2.50' + 1.38' - 0.333') = 3.547

# of bars = (40 - 0.333) ÷ 0.75' = 53+1 = 54 bars

---

501 #5 @ 12"

Bar Length = (9.11' + 1.38 - 0.333) = 10.157'

# of bars = (40 - 0.33) ÷ 1 = 39 + 1 = 40 bars

502 #5 To+4

Bar Length = (40 - 0.333) = 39.67'

# of bars = 4

503 #5 @ 9"

Bar Length = (5.83 - 1.38 + 1.5 - 0.167') = 5.793

# of bars = (40 - 0.333') ÷ 0.75' = 53 + 1 = 54 bars

POSTED BY DATE POSTED TO

CEM-4801 (HC-52 REV. 11/92)

JOB STAMP

ITEM Rebar Quantities
LOCATION RW #1
CALC. BY
CK. BY R. Washington
FILE NO EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-24-2012

Segment (2) H=12

Φ #6 = 0.75" = 0.0625'

604d #6@9" X=1.38' (35 * 0.0625') = 2.19' B=5.83'

Bar Length = [(5.83' - 1.38 + 2.19] - 0.167' = 6.473'

# of bars = (40 - 0.333') ÷ 0.75 = 53 + 1 = 54 bars

504 #5@12"

Bar Length = (40 - 0.333') = 39.67'

# of bars = (5.83' - 1.38 - 0.167') ÷ 1 = 4 + 1 = 5 * 2 = 10 bars

505 #5@9"

Bar Length = (2.50 + 1') - 0.167' = 3.333'

# of bars = (40 - 0.333') ÷ 0.75' = 53 + 1 = 54 bars

506 #5@12"

Bar Length = (40 - 0.333) = 39.67'

# of bars = (2.50 - 0.167) ÷ 1' = 2 + 1 = (3 * 2 rows) = 6 bars

506S #5@18"

Bar Length = (40 - 0.333') = 39.67'

# of bars = (9.11 - 0.333) ÷ 1.5' = 5 + 1 = 6 bars

JOB STAMP

ITEM Rebar Quantities
LOCATION RW #1
CALC. BY
CHECKED BY R. Washington

FILE NO EA 06-2HT20
SEGREGATION YES NO
DATE
DATE 5-7-2012

Segment ② H = 12
L = 40
10" = 0.833' 16" = 1.33'

40ST #4 @ 18" H = 9.11

Bar Length = (40 - 0.333) = 39.67'

# of bars = (9.11 - 0.333') ÷ 1.5 = 5 + 1 = 6 bars

60IE #6 @10" x 15'-0"

507 #5 @16 W = 8.33 H = 1.5 + (2.5) = 4.0

Bar Length = (8.33 - 0.333') = 8.00'

# of bars = (4.0 - 0.333') ÷ 1.33 = 3 + 1 = 4 * 2 = 8 bars

508 #5 $\lceil^{2'-0"}$ @16"

Bar Length = 2 [(4.0 - 0.333') + 2'] = 11.334

# of bars = [(8.33 - 0.333) ÷ 1.33] = 6 + 1 = 7 bars

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DG-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 1 OF 3

JOB STAMP

ITEM Rebar Quantities

FILE NO EA 06-2HT20

LOCATION RW #1

SEGREGATION YES ☐ NO ☐

CALC. BY

DATE

CHK. BY Rachel Washington

DATE 5-24-12

Segment (3) H=14

12+80 to 13+20

H=10.37' W=9.58 B=6.583' C=3.0' L=40

2"=0.167' 3"=0.25' 4"=0.333' 9"=0.75' F=1.67

X=1.43 7"=0.583'

602C #6@7"

Bar Length=(10.37-0.167')+(1.67-0.25')=11.623'

Hook=(3.00'+1.43'-0.333')=4.097

# of bars=(40-0.333')÷0.583'=68+1=69 bars

501 #5@12"

Bar Length=(10.37+1.67-0.333)=11.707'

# of bars=(40-0.333')÷1=39+1=40 bars

502 #5 To+4

Bar Length=(40-0.333)=39.67'

# of bars=4

503 #5@7"

Bar Length=(6.583-1.43+1.5-0.167')=6.486

# of bars=(40-0.333)÷0.583"=68+1=69 bars

POSTED BY DATE POSTED TO

CEM-4801 (HC-52 REV. 11/92)

JOB STAMP

ITEM Rebar Quantities
LOCATION RW #1
CALC. BY
CK. BY Rachel Washington
FILE NO EA 06-2HT20
SEGREGATION YES NO
DATE
DATE 5-7-12

Segment (3) H=14

Φ #6 = 0.75" = 0.0625'

H = 10.37'
X = 1.43 B = 6.583' 18" = 1.5' 9" = 0.75' C = 3.0''

604d #6@7" (45 * 0.0625') = 2.812 L=40

Bar Length = [(6.583 - 1.43' + 2.81)] - 0.167' = 7.796'

# of bars = (40 - 0.333') ÷ 0.583 = 68 + 1 = 69 bars

504 #5@12"

Bar Length = (40 - 0.333') = 39.67'

# of bars = (6.583 - 1.43' - 0.167') ÷ 1 = (5+1)(2sets) = 12 bars

505 #5@7"

Bar Length = (3.00 +1) - 0.167' = 3.833'

# of bars = (40 - 0.333') ÷ 0.583' = 68 + 1 = 69 bars

506 #5@12"

Bar Length = (40 - 0.333) = 39.67'

# of bars = (3.00' - 0.167') ÷ 1' = 3 + 1 = 4 x 2 rows = 8 bars

506S #5@18"

Bar Length = (40 - 0.333') = 39.67'

# of bars = (10.37 - 0.333) ÷ 1.5' = 6 + 1 = 7 bars

JOB STAMP

Segment (3) H=14

ITEM Rebar Quantities
LOCATION RW#1
CALC BY
CHK BY Rachel Washington

FILE NO. EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-7-12

H = 10.37' 4" = 0.333' 10" = 0.833' 16" = 1.33'
18" = 1.5' L = 40 W = 9.58

405T #4 @ 18"

Bar Length = (40 - 0.333') = 39.67'

# of bars = (10.37 - 0.333') ÷ 1.5' = 6 + 1 = 7 bars

507 #5 @16" W = 9.58' H_{step} = 1.67 + 2.0 = 3.67

Bar length = (9.58 - 0.333) = 9.247'

# of bars = (3.67 - 0.333) ÷ 1.33 = (2+1)(2sets) = 6 bars

508 #5 $\lceil^{2'-0"}$ @16"

Bar Length = 2 [(3.67 - 0.333) + 2] = 10.674'

# of bars = [(9.58 - 0.333) ÷ 1.33] = 6 + 1 = 7 bars

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DO-OEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

JOB STAMP

ITEM Rebar Quantities FILE NO. EA 06-2HT201

LOCATION RW#1 SEGREGATION YES NO

CALC. BY

CHK. BY Rachel Washington DATE 5-24-12

Segment (4) H=14

13+20 to 13+40

H=11.35 W=9.58' B=6.583' C=3.0 L=20

2"=0.167' 3"=0.25' 4"=0.333 7"=0.583' F=1.67'

X=1.473'

602C #6@7"

Bar Length=(11.35-0.167')+(1.67-0.25')=12.603

Hook=(3.0+1.473-0.333')=4.14'

# of bars=(20-0.333)÷0.583'=33+1=34 bars

501 #5@12"

Bar Length=(11.35+1.67-0.333)=12.687'

# of bars=(20-0.333')÷1=19+1=20 bars

502 #5 To+4

Bar Length=(20-0.333)=19.67'

# of bars=4

503 #5@7"

Bar Length=(6.583'-1.473+1.5-0.167')=6.443'

# of bars=(20-0.333)÷0.583'=33+1=34 bars

POSTED BY DATE POSTED TO

JOB STAMP

ITEM Rebar Quantities
LOCATION RW#1
CALC BY
CHK BY R. Washington
FILE NO EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-24-12

Segment (4) H = 14
L = 20
Φ = 6" = 0.75" = 0.0625'

H = 11.35 B = 6.583' C = 3.0' 7" = 0.583' 18" = 1.5' X = 1.473

604d #6 @ 7" (45 * 0.0625) = 2.81

Bar Length = [(6.583 - 1.473 + 2.81] - 0.167' = 7.753'

# of bars = (20 - 0.333') ÷ 0.583' = 33 + 1 = 34 bars

504 #5 @ 12"

Bar Length = (20. - 0.333) = 19.67'

# of bars = (6.583' - 1.473' - 0.167') ÷ 1 = (5+1) 2 sets = 12 bars

505 #5 @ 7"

Bar Length = (3.0 + 1) - 0.167' = 3.833

# of bars = (20 - 0.333') ÷ 0.583' = 33 + 1 = 34 bars

506 #5 @ 12"

Bar Length = (20 - 0.333) = 19.67'

# of bars = (3.0' - 0.167') ÷ 1 = 3 + 1 = 4 bar * 2 rows = 8 bars

506S #5 @ 18"

Bar Length = (20 - 0.333) = 19.67'

# of bars = (11.35 - 0.333) ÷ 1.5 = 7 + 1 = 8 bars

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC-OEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

JOB STAMP: Segment (4) H=14

ITEM: Rebar Quantities

FILE NO: EA 06-2HT201

LOCATION: RW #1

SEGREGATION YES NO

CALC. BY

DATE

CHK. BY: R. Washington

DATE: 5-24-12

H=11.35 4" = 0.333' 10" = 0.833' 16" = 1.33' 18" = 1.5'

405T #4 @ 18"

Bar Length = (20 - 0.333) = 19.67'

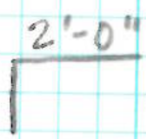
# of bar = (11.53 - 0.333) ÷ 1.5' = 7 + 1 = 8 bars

601E #6 @ 10" x 15'-0"

507 #5 @16 W = 9.58' H = (1.67 + 2) = 2.67

Bar Length = (9.58 - 0.333') = 9.247

# of bars = (2.67 - 0.333') ÷ 1.33 = 2 + 1 = 3 + 2sets = 6 bars

508 #5  @16"

Bar Length = 2[(2.67 - 0.333') + 2] = 8.674'

# of bars = [(9.58 - 0.333) ÷ 1.33] = 7 + 1 = 8 bars

POSTED BY DATE POSTED TO

CEM-4801 (HC-52 REV. 11/92)

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DO-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 1 OF 3

JOB STAMP

ITEM: Rebar Quantities | FILE NO: EA 06-2HT20

LOCATION: RW#1 | SEGREGATION: YES NO

CALC. BY: | DATE:

CK. BY: Rachel Washington | DATE: 5-24-12

Segment (5) H=14

13+40 to 13+60

H = 11.55 W = 9.58' B = 6.583' C = 3.0 L = 20

2" = 0.167' 3" = 0.25' 4" = 0.333' 7" = 0.583' F = 1.67'

X = 1.481

602c #6@7'

Bar Length = (11.55 - 0.167') + (1.67 - 0.25') = 12.803'

Hook = (3.0 + 1.481 - 0.333') = 4.148'

# of bars = (20 - 0.333') ÷ 0.583' = 33 + 1 = 34 bars

501 #5@12"

Bar Length = (11.55 + 1.67 - 0.333) = 12.887'

# of bars = (20 - 0.333) ÷ 1 = 19 + 1 = 20 bars

502 #5 To + 4

Bar Length = (20 - 0.333) = 19.67'

# of bars = 4

503 #5@7"

Bar Length = (6.583 - 1.481 + 1.5' - 0.167') = 6.435'

# of bars = (20 - 0.333) ÷ 0.583' = 33 + 1 = 34 bars

POSTED BY DATE POSTED TO

CEM-4801 (HC-52 REV. 11/92)

JOB STAMP

ITEM Rebar Quantities
LOCATION RW #1
CALC BY
CHK BY Rachel Washington
FILE NO EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-24-12

Segment (5) H=14

ϕ#6 = 0.75" = 0.0625'

H=11.55 B=6.583 C=3.0 7" = 0.583' 18" = 1.5' X=1.481

604D #6 @ " (45 * 0.0625) = 2.81'

Bar Length = [(6.583 - 1.481 + 2.81] - 0.167' = 7.745

# of bars = (20 - 0.333) ÷ 0.583 = 33 + 1 = 34 bars

504 #5 @ 12

Bar Length = (20 - 0.333) = 19.67'

# of bars = (6.583 - 1.481 - 0.167) ÷ 1 = 5 + 1 (2 sets) = 12 bars

505 #5 @ 7"

Bar Length = (3.0 + 1) - 0.167' = 3.833'

# of bars = (20 - 0.333) ÷ 0.583' = 33 + 1 = 34 bars

506 #5 @ 12"

Bar Length = (20 - 0.333) = 19.67'

# of bars = (3.0 - 0.167) ÷ 1 = (3 + 1)(2 rows) = 8 bars

506S #5 @ 18"

Bar Length = (20 - 0.333) = 19.67'

# of bars = (11.55 - 0.333) ÷ 1.5' = 7 + 1 = 8 bars

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DO-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

JOB STAMP

Segment (5) H = 14

ITEM: Rebar Quantities

LOCATION: RW #1

CALC BY:

CHK BY: Rachel Washington

FILE NO: EA 06-2HT20

SEGREGATION YES NO

DATE:

DATE: 5-24-12

H = 11.55' 4" = 0.333' 10" = 0.833' 16" = 1.33' 18" = 1.5'

405T #4@18"

Bar Length = (20 - 0.333) = 19.67'

# of bars = (11.55 - 0.333) ÷ 1.5' = 7 + 1 = 8 bars

601E #6@10" x 15'-0

POSTED BY DATE POSTED TO

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DO-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 1 OF 3

JOB STAMP

Rebar Quantities — EA 06-2HT201

LOCATION RW #1

CALC. BY Rachel Washington — DATE 5-24-12

CHK. BY — DATE

FILE NO.

SEGREGATION YES NO

Segment (6) H=16

13+60 to 13+80

H=10.75 W=10.75 B=7.25' C=3.50 L=20

2"=0.167' 3"=0.25' 4"=0.333' 6"=0.5' F=1.67'

X=1.448'

702C #7@6"

Bar Length=(10.75'-0.167')+(1.67'-0.25')=12.003

Hook=(3.50+1.448'-0.333)=4.615'

# of bars=(20-0.333')÷0.500'=$(\frac{39}{2})$+1=21 bars

501 #5@12" Bar Length=(10.75+1.67-0.333)=12.087'

# of bars=(20-0.333)÷1=19+1=20 bars

703C Short #7@6" h_1=5.75'

Bar Length=(5.75-0.167)+(1.67-0.25)=7.003

Hook=(3.5+1.448-0.333)=4.615

# of bars=(20-0.333)÷0.50=$(\frac{39}{2})$+1=21 bars

502 #5 TO T4

Bar Length=(20-0.333)=19.67'

# of bars=4

503 #5@6"

Bar Length=(7.25-1.448+1.5'-0.167')=7.135'

# of bars=(20-0.333')÷0.500'=39+1=40 bars

POSTED BY DATE POSTED TO

CEM-4801 (HC 52 REV. 11/92)

JOB STAMP

ITEM Rebar Quantities
LOCATION RW#1
CALC BY
CHK BY Rachel Washington
FILE NO EA 06-2HT20
SEGREGATION YES NO
DATE
DATE 5-24-12

Segment ⑥ H = 16

ϕ#6 = 0.75" = 0.0625'

H=10.75' B=7.25 C=3.5 9"=0.75' 18"=1.5' X=1.448

904D #9@6" (45 * 0.0625') = 2.81 6" = 0.50'

Bar Length = [17.25' - 1.448 + 2.81] - 0.167' = 8.445'

# of bars = (20 - 0.333) ÷ 0.500' = 39 + 1 = 40 bars

504 #5@12"

Bar Length = (20 - 0.333') = 19.67'

# of bars = (7.25'' - 1.448 - 0.167) ÷ 1 = 5+1 (2sets) = 12bar.

505 #5@6"

Bar Length = (3.5 + 1) - 0.167' = 4.333'

# of burs = (20 - 0.333) ÷ 0.500' = 39+1 = 40 bars

506 #5@12"

Bar Length = (20 - 0.333) = 19.67

# of bars = (3.5 - 0.167) ÷ 1 = 3+1 = 4 (2sets) = 8 bars

506S #5@18" zone 1

Bar Length = (20 - 0.333) = 19.67'

# of bars = $\left(\frac{10.75}{2} - 0.333\right) \div 1.5' = 3+1 = 4$ bars

506S #5@12" zone 2

Bar Length = (20 - 0.333) = 19.67'

# of bars = $\left(\frac{10.75}{2} - 0.333\right) \div 1.0' = 5+1 = 6$ bars

JOB STAMP

ITEM Rebar Quantities
LOCATION RW #1
CALC BY
CHK BY Rachel Washington
FILE NO EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-9-12

Segment (6) H=14
L=20
W=10.75 F=1.67'

H=10.75 4"=0.333' 10"=0.833' 16"=1.33' 18"=1.5'

405T #4@18"
Bar Length = (20-0.333) = 19.67'
# of bars = (10.75'-0.333') ÷ 1.5' = 7+1 = 8 bars

507 #5@16" W=10.75' H=(1.67+2.67)=4.34'
Bar Length = (10.75' - 0.333) = 10.417'
# of bar = (4.34-0.333) ÷ 1.33' = 3+1=4 x (2 sets) = 8 bars

508 #5 2'-0" @16"
Bar Length = 2[(4.34-0.333')+2] = 12.014'
# of bars = [(10.75 - 0.333) ÷ 1.33] = 8+1 = 9 bars

POSTED BY DATE POSTED TO

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 1 OF 3

JOB STAMP

ITEM: Rebar Quantities

LOCATION: RW#1

CALC. BY: Rachel Washington

DATE: 5-24-12

FILE NO: EA 06 2HT201

SEGREGATION: YES ☐ NO ☐

Segment (7) H=16

13+80 to 14+40

H=11.82' W=10.75' B=7.25' C=3.50' L=60

2"=0.167" 3"=0.25' 4"=0.333' 6"=0.5' f=1.67'

X=1.493

702C #7@6"

Bar Length = (11.82 - 0.167) + (1.67 - 0.25) = 13.073'

Hook = (3.50 + 1.493 - 0.333) = 4.66'

# of bars = (60 - 0.333) ÷ 0.50 = $\left(\frac{119}{2}\right)$ + 1 = 60 bars

501 #5@12"

Bar Length = (11.82 + 1.67 - 0.333) = 13.157

# of bars = (60 - 0.333) ÷ 1 = 59 + 1 = 60 bars

703c Short #7@6" h_1 = 5.75'

Bar Length = (5.75 - 0.167) + (1.67 - 0.25) = 7.003'

Hook = (3.5 + 1.493 - 0.333) = 4.66

# of bars = (60 - 0.333) ÷ 0.50 = $\left(\frac{119}{2}\right)$ + 1 = 60 bars

502 #5 Tot 4

Bar Length = (60 - 0.333) = 59.67'

# of bars = 4

503 #5@6"

Bar Length = (7.25 - 1.493 + 1.5 - 0.167') = 7.09

# of bars = (60 - 0.333) ÷ 0.5' = 119 + 1 = 120 bars

POSTED BY DATE POSTED TO

CEM-4801 (HC-52 REV. 11/92)

JOB STAMP

Rebar Quantities
LOCATION RW#1
CALC BY
CHK BY Rachel Washington

EA 06 2HT201
SEGREGATION YES NO
DATE
DATE 5-24-12

Segment (7) H=16
L=60
#6=0.75"=0.0625'

H=11.82 B=7.25' C=3.5' 9"=0.75' 18"=1.5' X=1.493

904D #9@6" (45*0.0625')=2.81 6"=0.50"

Bar Length=[(7.25-1.493+2.81)]-0.167=8.40'

# of bars=(60-0.333)÷0.500'=119+1=120 bars

504 #5@12"

Bar Length=(60-0.333)=59.67'

#of bars=(7.25-1.493-0.167)÷1=5+1(2sets)=12 bars

505 #5@6"

Bar Length=(3.5+1)-0.167=4.333

# of bars=(60-0.333)÷0.500=119 bars

506 #5@12"

Bar Length=(60-0.333)=59.67

# of bars=(3.5-0.167)÷1=(3+1)(2sets)=8 bars

506S #5@18" zone1

Bar Length=(60-0.333)=59.67'

# of bars=$\left(\frac{11.82}{2}-0.333\right)\div 1.5'=3+1=4$ bars

506S #5@12" zone 2

Bar Length=(60-0.333)=59.67'

# of bars=$\left(\frac{11.82}{2}-0.333\right)\div 1=5+1=6$ bars

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QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 3 OF 3

JOB STAMP

ITEM: Rebar Quantities

LOCATION: RW #1

FILE NO: EA 06 2HT201

SEGREGATION: YES ☐ NO ☐

CALC. BY: Rachel Washington

CK. BY:

DATE: 5-24-12

Segment ⑦ H=16

L=60

W=10.75 F=1.67'

H=11.82 4"=0.333' 10"=0.833' 16"=1.33 18"=1.5'

405T #4 @18"

Bar Length = (60 - 0.333) = 59.67'

# of bars = (11.82 - 0.333) ÷ 1.5 = 7+1 = 8 bars

507 #5@16" W=10.75 H_{step} = (1.67 + 0.67) = 2.34'

Bar Length = (10.75 - 0.333) = 10.417'

# of bars = (2.34 - 0.333) ÷ 1.33' = 1+1 = 2 (2sets) = 4 bars

508 #5 ⌐ 2'-0" @16"

Bar Length = 2[(2.34 - 0.333) + 2] = 8.014'

# of bars = [(10.75 - 0.333) ÷ 1.33] = 8+1 = 9 bars

POSTED BY DATE POSTED TO

CEM-4801 (HC-52 REV. 11/92)

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DG-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

JOB STAMP

ITEM: Rebar Quantities | FILE NO.: EA 06-2HT201

LOCATION: RW #1 | SEGREGATION: YES ☐ NO ☐

CALC BY: | DATE:

CHK BY: Rachel Washington | DATE: 5-29-12

Segment (8) H=14

14+40 to 15+00

H=10.09 W=9.58' B=6.583' C=3.0' L=60'

2"=0.167' 3"=0.25' 4"=0.333' 7"=0.583' 9"=0.75'

X=1.420' F=1.67'

602C #6@7"

Bar Length=(10.09-0.167')+(1.67-0.25')=11.343

Hook=(3.0+1.420-0.333)=4.087'

# of bar = (60-0.333)÷0.583'=102+1=103 bars

501 #5@12"

Bar Length=(10.09+1.67'-0.333)=11.427'

# of bars=(60-0.333)÷1=59+1=60 bars

502 #5 Tot 4

Bar Length=(60-0.333)=59.67'

# of bars = 4

503 #5@7"

Bar Length=(6.583-1.420+1.5-0.167')=6.496'

# of bars=(60-0.333)÷0.583'=102+1=103 bars

POSTED BY DATE POSTED TO

JOB STAMP

ITEM Rebar Quantitires
LOCATION RN#1
CALC BY
CHK BY Rachel Washington
FILE NO EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-29-12

Segment (8) H=14
L=60
ϕ #6 = 0.75" = 0.0625'

H=10.09 B=6.583' C=3.0' 9"=0.75' 18"=1.5' X=1.420'

609D #6 @ 7" (45 * 0.0625') = 2.81' 7" = 0.583'

Bar Length = [(6.583' - 1.420 + 2.81] - 0.167' = 7.806'

# of bars = (60 - 0.333) ÷ 0.583' = 102 + 1 = 103 bars

504 #5 @ 12"

Bar Length = (60 - 0.333) = 59.67

# of bars = (6.583' - 1.420' - 0.167) ÷ 1 = (5 + 1) 2sets = 12 bars

505 #5 @ 7"

Bar Length = (3.0 + 1) - 0.167' = 3.833'

# of bars = (60 - 0.333) ÷ 0.583' = 103 + 1 = 104 bars

506 #5 @ 12"

Bar Length = (60 - 0.333) = 59.67'

# of bars = (3.0 - 0.167) ÷ 1 = 3 + 1 = 4 (2sets) = 8 bars

506S #5 @ 18"

Bar Length = (60 - 0.333) = 59.67'

# of bars = (10.09 - 0.333) ÷ 1.5' = 6 + 1 = 7 bar

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QUANTITY CALCULATIONS

DO-OEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

JOB STAMP: Segment (8) H=14

ITEM: Rebar Quantities

FILE NO: EA 06-2HT201

LOCATION: RW #1

SEGREGATION YES [ ] NO [ ]

CALC. BY:

DATE:

CHK. BY: Rachel Washington

DATE: 5-29-12

W=9.58' F=1.67'

H=10.09' 4"=0.333' 10"=0.833' 16"=1.33' 18"=1.5'

405T #4@18"

Bar Length= (60-0.333')=59.67'

# of bars = (10.09-0.333) ÷ 1.5' = 6+1 = 7 bars

601E #6@10" × 15'-0"

507 #5@16" H_{step} = 1.67 + (261.66-259) = 4.33

Bar Length= (9.58-0.333) = 9.247'

# of bars = (4.33'-0.333) ÷ 1.33' = 3+1 = 4 bars (2 sets) = 8 bars

508 #5 (2'-0" leg) @16"

Bar Length= 2[(4.33'-0.333)+2] = 11.99'

# of bars = [(9.58-0.333) ÷ 1.33] = 6+1 = 7 bars

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CEM-4801 (HC-52 REV. 11/92)

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DG-CEM-4001 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 1 OF 3

JOB STAMP

ITEM: Rebar Quantities | FILE NO.: EA 06-2HT201

LOCATION: RW#1 | SEGREGATION: YES ☐ NO ☐

CALC. BY: | DATE:

CHK. BY: Rachel Washington | DATE: 5-29-12

Segment (9) H=14

15+00 to 15+40

H=10.75' W=9.58' B=6.583 C=3.0 L=40 7"=0.583' X=1.448 F=1.67' 2"=0.167' 3"=0.25' 4"=0.333' 9"=0.75

602C #6@7"

Bar Length=(10.75-0.167)+(1.67'-0.25')=12.00

Hook=(3.0+1.448-0.333)=4.115

# of bars=(40-0.333)÷0.583'=68+1=69 bars

501 #5@12"

Bar Length=(10.75+1.67-0.333)=12.09'

# of bars=(40-0.333)÷1=39+1=40 bars

502 #5 To+4

Bar Length=(40-0.333)=39.67'

# of bars=4

503 #5@7"

Bar Length=(6.583-1.448+1.5'-0.167')=6.468'

# of bars=(40-0.333)÷0.583'=68+1=69 bars

POSTED BY | DATE | POSTED TO

CEM-4001 (HC-52 REV. 11/92)

JOB STAMP

ITEM Rebar Quantities
LOCATION RW #1
CALC BY
CHK BY Rachel Washington
FILE NO EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-29-12

Segment (10) H=14

#6 = 0.75" = 0.0625'

H=10.75 W=9.58' B=6.583 C=3.0' L=40' F=1.67'

2" = 0.167' 3" = 0.25' 4" = 0.333 9" = 0.75' 7" = 0.583'

X=1.448' (45*0.0625') = 2.81'

6040 #6@7"

Bar Length=[(6.583'-1.448+2.81]-0.167'= 7.78'

# of bars = (40-0.333) ÷ 0.583' = 68+1 = 69 bars

504 #5@12"

Bar Length = (40-0.333) = 39.67

# of bars = (6.583-1.448-0.167) ÷ 1 = 5+1(2sets) = 12 bars

505 #5@7"

Bar Length = (3.0+1)-0.167' = 3.833'

# of bars = (40-0.333) ÷ 0.583' = 68+1 = 69 bars

506 #5@12"

Bar Length = (40-0.333) = 39.67

# of bars = (3.0-0.167) ÷ 1 = (3+1)(2sets) = 8 bars

506S #5@18"

Bar Length = (40-0.333) = 39.67'

# of bars = (10.75-0.333) ÷ 1.5' = 7+1 = 8 bars

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JOB STAMP

Segment (10) H = 14

16" = 1.33' 18" = 1.5'

ITEM Rebar Quantities
LOCATION RW #1
CALC. BY
CHK. BY Rachel Washington

FILE NO EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-29-12

W = 9.58' F = 1.67' H = 13.72 4" = 0.333' 10" = 0.833'

405T #4 @ 18"

Bar Length = (40 - 0.333) = 39.67'

# of bars = (10.75 - 0.333) ÷ 1.5 = 7 + 1 = 8 bars

601E #6 @ 10" x 15'-0"

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QUANTITY CALCULATIONS

DO-OEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

JOB STAMP

Segment (10) H = 12

ITEM: Rebar Quantities

LOCATION: RW #1

CALC. BY:

CHK. BY: Rachel Washington

FILE NO.: EA 06-2HT201

SEGREGATION: YES ☐ NO ☐

DATE:

DATE: 5-29-12

15+40 to 15+75.84

H = 9.52 W = 8.33' B = 5.83' C = 2.5' L = 35.84'

2" = 0.167' 3" = 0.25' 4" = 0.333' 9" = 0.75' F = 1.5'

X = 1.397'

602C #6@9"

Bar Length = (9.52 - 0.167') + (1.5' - 0.25') = 10.603'

Hook = (2.5 + 1.397 - 0.333') = 3.564

# of bars = (35.84 - 0.333') ÷ 0.75' = 47 + 1 = 48 bars

501 #5 @ 12"

Bar Length = (9.52 + 1.50 - 0.333) = 10.687'

# of bars = (35.84 - 0.333) ÷ 1 = 35 + 1 = 36 bars

502 #5 To + 4

Bar Length = (35.84 - 0.333) = 35.51

# of bars = 4

503 #5 @ 9"

Bar Length = (5.83 - 1.397 + 1.5 - 0.167') = 5.766'

# of bars = (35.84 - 0.333) ÷ 0.75 = 47 + 1 = 48 bars

POSTED BY DATE POSTED TO

JOB STAMP

ITEM: Rebar Quantities
LOCATION: RW #1
CALC. BY:
CHK. BY: Rachel Washington
FILE NO: EA 06-2HT201
SEGREGATION: YES ☐ NO ☐
DATE:
DATE: 5-29-12

Segment (11) H = 12
L = 80
ϕ #6 = 0.75" = 0.0625'

H = 9.52 B = 5.83 C = 2.50 9" = 0.75' 18" = 1.5' X = 1.397'

604D #6@9" (35 * 0.0625') = 2.19'

Bar Length = [(5.83 - 1.397 + 2.19] - 0.167 = 6.456

# of bars = (35.84 - 0.333 ÷ 0.75' = 47 + 1 = 48 bars

504 #5@12"

Bar Length = (35.84 - 0.333) = 35.51

# of bars = (5.83 - 1.397 - 0.167) ÷ 1 = (4 + 0)(2 sets) = 10 bars

505 #5@9"

Bar Length = (2.50 + 1) - 0.167' = 3.33'

# of bars = (35.84 - 0.333) ÷ 0.75' = 47 + 1 = 48 bars

506 #5@12"

Bar Length = (35.84 - 0.333) = 35.51'

# of bars = (2.50 - 0.167') ÷ 1 = (2 + 1)(2 rows) = 6 bars

506S #5@18"

Bar Length = (35.84 - 0.333) = 35.51'

# of bars = (9.52 - 0.333) ÷ 1.5' = 6 + 1 = 7 bars

POSTED BY DATE POSTED TO

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 3 OF 3

JOB STAMP

ITEM: Rebar Quantities

LOCATION: RW # 1

CALC. BY:

CHK. BY: Rachel Washington

FILE NO: EA 06-2HT201

SEGREGATION YES NO

DATE:

DATE: 5-29-12

Segment (10) H=12

W=8.33

H=9.52 4"=0.333' 10"=0.833' 16"=1.33' 18"=1.5'

405T #4@18"

Bar Length = (35.84 - 0.333) = 35.51

# of bars = (9.52 - 0.333') ÷ 1.5' = 6+1 = 7 bars

POSTED BY DATE POSTED TO

CEM-4801 (HC-52 REV. 11/92)

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC CEM 4801 (OLD HC-52 REV. 11/92) 7541:3520-0

SHEET 1 OF 3

JOB STAMP

ITEM Rebar Quantities

FILE NO EA 06-2HT20

LOCATION RW#3

SEGREGATION YES ☐ NO ☐

CALC BY

DATE

CHK BY Rachel Washington

DATE 5-10-2012

Segment (1) H=8

11+20 to 11+60

H=8.02' W=7.25' B=5.0' C=2.25' L=40

2"=0.167' 3"=0.25' 4"=0.333' 9"=0.75' F=1.33'

X=1.334

602C #6@9"

Bar Length=(8.02-0.167)+(1.33-0.25')=8.933

Hook=(2.25+1.334-0.333)=3.25

# of bars = (40-0.333)÷0.75'=53+1=54 bars

501 #5@12"

Bar Length=(8.02+1.33-0.333)=9.017'

# of bars=(40-0.333)÷1=39+1=40 bars

502 #5 To+4

Bar Length=(40-0.333)=39.67'

# of bars=4

503 #5@9"

Bar Length=(5-1.334+1.5-0.167)=5.00'

# of bars=(40-0.333)÷0.75'=53+1=54 bars

POSTED BY DATE POSTED TO

JOB STAMP

ITEM Rebar Quantities
LOCATION RW #3
CALC BY Rachel Washington
CHK BY
DATE 5-10-2012
PREFIX EA 06-2HT20
SEGREGATION YES NO

Segment ① H=8

ϕ#6 = 0.75" = 0.0625'

H=8.02 B=5.0 C=2.25 9" = 0.75' 18" = 1.5' x = 1.334'

604d #6@9" (35 * 0.0625') = 2.19' L=40

Bar Length = [(5.0 - 1.334 + 2.19')] - 0.167 = 5.689'

# of bars = (40 - 0.333') ÷ 0.75' = 53 + 1 = 54 bars

504 #5@12"

Bar Length = (40 - 0.333) = 39.67'

# of bars = (5 - 1.334 - 0.167) ÷ 1 = (3+1)(2 sets) = 8 bars

505 #5@9"

Bar Length = (2.25 + 1) - 0.167 = 3.083

# of bars = (40 - 0.333') ÷ 0.75' = 53 + 1 = 54 bars

506 #5@12"

Bar Length = (40 - 0.333) = 39.67'

# of bars = (2.25' - 0.167) ÷ 1 = (2+1)(2 rows) = 6 bars

506S #5@18"

Bar Length = (40 - 0.333) = 39.67'

# of bars = (8.02 - 0.333) ÷ 1.5' = 5 + 1 = 6 bars

JOB STAMP

ITEM Rebar Quantities
LOCATION RW#3
CALC. BY Rachel Washington
CHK. BY
DATE 5-10-2012
FILE NO. EA 06-2HT201
SEGREGATION YES NO

Segment ① H=8

W=7.25' F=1.33' L=40

H=8.02' 4"=0.333' 10"=0.833' 16"=1.33' 18"=1.5'

405T #4@18"

Bar Length=(40-0.333)=39.67'

# of bars = (8.02'-0.333) ÷ 1.5 = 5+1 = 6 bars

601E #6@10" x 15'-0"

Bar Length= 15'

507 #5@16" H_{step} = 1.33+1.17+1.33 = 3.83'

Bar Length=(7.25-0.333')=6.917'

# of bars = (3.83-0.333) ÷ 1.33 = (3+1)(2sets) = 8 bars

508 #5 2'-0" @16"

Bar Length= 2[(3.83-0.333)+2] = 10.994'

# of bars = [(7.25-0.333) ÷ 1.33] = 5+1 = 6 bars

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QUANTITY CALCULATIONS

DO-DEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 1 OF 3

JOB STAMP

ITEM Rebar Quantities — FILE NO. EA 06-2HT201

LOCATION RW #3 — SEGREGATION YES ☐ NO ☐

CALC. BY — DATE

CHK. BY Rachel Washington — DATE 5-10-12

Segment ② H=10

11+60 to 12+55

H=10.38' W=7.58 B=5.25' C=2.33' L=95'

2"=0.167' 3"=0.25' 4"=0.333' 9"=0.75' f=1.33'

x=1.432'

602C #6@9"

Bar Length=(10.38-0.167)+(1.33-0.25')=11.31'

Hook (2.33+1.43-0.333)=3.43

# of bars=(95-0.333')÷0.75'=126+1=127 bars

501 #5@12"

Bar Length=(10.38+1.33-0.333)=11.40'

# of bars=(95-0.333)÷1=95+1=96 bars

502 #5 To+4

Bar Length=(95-0.333)=94.67'

# of bars=4

503 #5@9"

Bar Length=(5.25-1.43+1.5-0.167')=5.15'

# of bars=(95-0.333')÷0.75'=126+1=127 bars

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CEM-4801 (HC 52 REV. 11/92)

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 2 OF 3

JOB STAMP: Segment (2) H=10

ITEM: Rebar Quantities

EA NO: EA06-2HT201

LOCATION: RW#3

SEGREGATION YES ☐ NO ☐

CALC. BY

DATE

CK. BY: Rachel Washington

DATE: 5-10-12

ϕ#6 = 0.75" = 0.0625'

H = 10.38 B = 5.25' C = 2.33' 9" = 0.75' 18" = 1.5'

X = 1.432' (35 × 0.0625') = 2.19' L = 95

604D #6@9"

Bar Length = [(5.25 - 1.43 + 2.19)] - 0.167' = 5.843'

# of bars = (95 - 0.333) ÷ 0.75' = 126 + 1 = 127 bars

504 #5@12"

Bar Length = (95 - 0.333) = 94.67'

# of bars = (5.25 - 1.43' - 0.167) ÷ 1 = (3+1)(2rows) = 8 bars

505 #5@9"

Bar Length = (2.33 + 1) - 0.167 = 3.163'

# of bars = (95 - 0.333) ÷ 0.75' = 126 + 1 = 127 bars

506 #5@12"

Bar Length = (95 - 0.333) = 94.67

# of bars = (2.33 - 0.167) ÷ 1 = (2+1)(2rows) = 6 bars

506S #5@18"

Bar Length = (95 - 0.333) = 94.67

# of bars = (10.38 - 0.333) ÷ 1.5' = 6 + 1 = 7 bars

POSTED BY DATE POSTED TO

CEM 4801 (HC-52 REV. 11/92)

JOB STAMP

ITEM Rebar Quantities
LOCATION RW#3
CALC BY
CK BY Rachel Washington
DATE 5-10-12
FILE NO EA 06-2HT201
SEGREGATION YES NO
DATE

Segment (2) H=10

W=7.25 F=1.33'

H=10.38 4"=0.333' 10"=0.833' 16"=1.33'
18"=1.5' L=95

405T #4@18"

Bar Length = (95-0.333)= 94.67'

# of bars = (10.38-0.333) ÷ 1.5' = 6+1 = 7bars

601E #6@10" x 15'-0"

Bar Length = 15'

507 #5@16" H_{step} = 1.33 + 0.92 + 1.33 = 3.58'

Bar Length = (7.25'-0.333)= 6.92'

# of bars = (3.58-0.333) ÷ 1.33 = (2+1)(2sets) = 6bars

508 #5 [2'-0" @16"

Bar Length = 2[(3.58-0.333)+2] = 10.494'

# of bars = [(7.25-0.333) ÷ 1.33] = 5+1 = 6 bars

JOB STAMP

ITEM Rebar Quantities
LOCATION RW#3
CALC. BY
CHK. BY Rachel Washington

FILE NO EA 06-2HT20
SEGREGATION YES NO
DATE
DATE 5-10-12

Segment ③ H = 12

12+55 to 12+63.83

H = 12.03' W = 8.33' B = 5.83' C = 2.50' L = 8.83'

2" = 0.167' 3" = 0.25' 4" = 0.333' 9" = 0.75' F = 1.5'

X = 1.522

602C #6@9"

Bar Length = (12.03 - 0.167') + (1.5' - 0.25') = 13.113'

Hook = (2.5 + 1.522 - 0.333') = 3.689'

# of bars = (8.83 - 0.333) ÷ 0.75' = 11 + 1 = 12 bars

501 #5@12"

Bar Length = (12.03' + 1.50 - 0.333) = 13.197'

# of bars = (8.83 - 0.333) ÷ 1 = 8 + 1 = 9 bars

502 #5 To + 4

Bar Length = (8.83 - 0.333) = 8.497'

# of bars = 4

503 #5@9"

Bar Length = (5.83' - 1.522 + 1.5 - 0.167) = 5.641

# of bars = (8.83 - 0.333) ÷ 0.75 = 11 + 1 = 12 bars

JOB STAMP

ITEM: Rebar Quantities
LOCATION: RW#3
CALC. BY:
CHK. BY: Rachel Washington
FILE NO: EA 06-2HT201
SEGREGATION: YES ☐ NO ☐
DATE:
DATE: 5-10-12

Segment ③ H=12
L=8.83
ϕ #6 = 0.75" = 0.0625'

H=12.03' B=5.83 C=2.50 9" = 0.75' 18" = 1.5' X=1.522

6040 #6@9" (35 * 0.0625') = 2.19'

Bar Length = [(5.83 - 1.522 + 2.19) - 0.167 = 6.33'

# of bars = (8.83 - 0.333) ÷ 0.75' = 11 + 1 = 12 bars

504 #5@12"

Bar Length = (8.83' - 0.333) = 8.497'

# of bars = (5.83 - 1.522 - 0.167) ÷ 1 = (4+1)(2sets) = 10 bars

505 #5@9"

Bar Length = (2.50 + 1) - 0.167 = 3.33'

# of bars = (8.83 - 0.333) ÷ 0.75' = 11 + 1 = 12 bars

506 #5@12"

Bar Length = (8.83 - 0.333) = 8.497'

# of bars = (2.50 - 0.167) ÷ 1 = (2+1)(2rows) = 6 bars

506S #5@18"

Bar Length = (8.83 - 0.333) = 8.497'

# of bars = (12.03 - 0.333) ÷ 1.5 = 8 + 1 = 9 bars

JOB STAMP

ITEM Rebar Quantities
LOCATION RW#3
CALC BY
CHK BY Rachel Washington
FILE NO EA06-2HT201
SEGREGATION YES NO
DATE
DATE 5-10-12

Segment ③ H=12

L=8.83'

H=12.03' W=8.33' 4"=0.333' 10"=0.833' 16"=1.33' 18"=1.5'

405T #4@18"

Bar Length = (8.83'-0.333) = 8.497'

# of bars = (12.03-0.333) ÷ 1.5 = 8+1 = 9 bars

601E #6@10" x 15'-0"

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 1 OF 3

JOB STAMP

Segment (1) H=12

ITEM: Rebar Quantities

LOCATION: RW #5

CALC. BY:

CHK. BY: Rachel Washington

FILE NO.: EA 06-2HT201

SEGREGATION: YES ☐ NO ☐

DATE:

DATE: 5-10-12

13+32.96 to 13+60

H=12.79 W=8.33' B=5.83' C=2.5' L=27.04'

2"=0.167' 3"=0.25' 4"=0.333' 9"=0.75' F=1.5'

X=1.533

602C #6@9"

Bar Length=(12.79-0.167)+(1.5-0.25)=13.873'

Hook=(2.5+1.533-0.333)=3.70'

#of bars=(27.04-0.333)÷0.75=36+1=37 bars

501 #5@12"

Bar Length=(12.79+1.50-0.333)=13.957'

# of bars=(27.04-0.333)÷1=27+1=28 bars

502 #5 Tot 4

Bar Length=(27.04-0.333)=26.707'

#of bars=4

503 #5@9"

Bar Length=(5.83-1.533+1.5-0.167)=5.63'

#of bars=(27.04-0.333)÷0.75'=36+1=38 bars

POSTED BY DATE POSTED TO

CEM-4801 (HC 52 REV. 11-92)

JOB STAMP

ITEM Rebar Quantities
LOCATION RW#5
CALC. BY
CHK. BY Rachel Washington
FILE NO EA 06-2HT2C
SEGREGATION YES NO
DATE
DATE 5-10-12

Segment ① H=12

ϕ#6 = 0.75" = 0.0625'

H=12.79' B=5.83' C=2.50' 9"=0.75' 18"=1.5' L=27.04

X=1.533 (35 * 0.0625') = 2.19'

604D #6@9"

Bar Length=[(5.83 - 1.533 + 2.19] - 0.167 = 6.32'

# of bars = (27.04 - 0.333) ÷ 0.75 = 36 + 1 = 37 bars

504 #5@12"

Bar Length = (27.04 - 0.333) = 26.707'

# of bars = (5.83 - 1.533 - 0.167) ÷ 1 = (4+1)(2 sets) = 10 bars

505 #5@9"

Bar Length = (2.50 + 1) - 0.167' = 3.33'

# of bars = (27.04 - 0.333) ÷ 0.75' = 36 + 1 = 37 bars

506 #5@12"

Bar Length = (27.04 - 0.333) = 26.707'

# of bars = (2.50 - 0.167) ÷ 1 = (2+1)(2rows) = 6 bars

506S #5@18"

Bar Length = (27.04 - 0.333) = 26.707'

# of bars = (12.79 - 0.333) ÷ 1.5 = 8 + 1 = 9 bars

POSTED BY DATE POSTED TO

JOB STAMP

ITEM Rebar Quantities
LOCATION RW#5
CALC. BY
CHK. BY Rachel Washington
FILE NO. EA 06-2HT201
SEGREGATION YES NO
DATE
DATE 5-10-12

Segment (1) H = 12

W = 8.33' L = 27.04'

H = 12.79' 4" = 0.333' 10" = 0.833' 16" = 1.33' 18" = 1.5'

405T #4 @ 18"

Bar Length = (27.04 - 0.333) = 26.707'

# of bars = (12.79 - 0.333) ÷ 1.5' = 8 + 1 = 9 bars

601E #6 @ 10" x 15'-0"

507 #5 @16" $H_{step} = 1.5 + \underset{F_{12}}{1.58} + \underset{F_{16}}{1.67} = 4.75'$

Bar Length = (8.33 - 0.333) = 7.997'

# of bars = (4.75 - 0.333) ÷ 1.33 = (3+1)(2sets) = 8 bars

508 #5 $\overset{2'-0"}{\square}$ @16"

Bar Length = 2[(4.75 - 0.333) + 2] = 12.834'

# of bars = [(8.33 - 0.333) ÷ 1.33] = 6 + 1 = 7 bars

POSTED BY DATE POSTED TO

JOB STAMP

Segment ② H=16

Rebar Quantities RW#5

LOCATION

CALC. BY

CHK. BY

FILE NO. EA 06 2HT201

SEGREGATION YES NO

DATE

DATE 5-10-12

13+60 to 14+30.21

Rachel Washington

H=16.73' W=10.75' B=7.25' C=3.50' L=70.21'

2"=0.167' 3"=0.25' 4"=0.333' 6"=0.50' F=1.67'

X=1.697'

702C #7@6"

Bar Length=(16.73-0.167)+(1.67-0.25)=17.983'

Hook=(3.5+1.697-0.333)=4.864'

# of bars=(70.21-0.333)÷0.50=$(\frac{140}{2})$+1= 71 bars

501 #5@12"

Bar Length=(16.73+1.67-0.333)=18.067'

# of bars=(70.21-0.333)÷1=70+1=71 bars

703C short #7@6" h_1=5.75'

Bar Length=(5.75-0.167)+(1.67-0.25)=7.003'

Hook=(3.5+1.697-0.333)=4.864'

# of bars=(70.21-0.333)÷0.50=$(\frac{140}{2})$+1=71 bars

502 #5 To+4

Bar Length=(70.21-0.333)=69.877'

# of bars=4

503 #5@6"

Bar Length=(7.25'-1.697+1.67-0.167)=7.056'

# of bars=(70.21-0.333)÷0.5=140+1=141 bars

JOB STAMP

ITEM: Rebar Quantities RW#5
LOCATION:
CALC. BY:
CHK. BY: Rachel Washington
DATE: 5-10-12
FILE NO.: EA 06 2HT201
SEGREGATION: YES ☐ NO ☐

Segment (2) H=16

ϕ#6 = 0.75" = 0.0625'

H=16.73' B=7.25' C=3.50' 6" = 0.50' 18" = 1.5' L=70.21'

X = 1.697' (35 * 0.0625') = 2.81'

904D #9@6"

Bar Length = [(7.25 - 1.697 + 2.81)] - 0.167 = 8.196

# of bars = (70.21 - 0.333) ÷ 0.5 = 140 + 1 = 141 bars

504 #5@12"

Bar Length = (70.21 - 0.333) = 69.877'

# of bars = (7.25 - 1.697 - 0.167) ÷ 1 = (5+1)(2rows) = 12

505 #5@6"

Bar Length = (3.50+1) - 0.167 = 4.33'

# of bars = (70.21 - 0.333) ÷ 0.5 = 140 + 1 = 141 bars

506 #5@12"

Bar Length = (70.21 - 0.333) = 69.877'

# of bars = (3.50 - 0.167) ÷ 1 = (3+1)(2rows) = 8 bars

506S #5@18" zone1

Bar Length = (70.21 - 0.333) = 69.877'

# of Bars = $\left(\left(\frac{16.73}{2}\right) - 0.333\right) \div 1.5 = 5 + 1 = 6$ bars

506S #5@12" zone2

Bar Length = (70.21 - 0.333) = 69.877'

# of bars = $\left(\left(\frac{16.73}{2}\right) - 0.333\right) \div 1 = 8 + 1 = 9$ bars

JOB STAMP

ITEM Rebar Quantities
LOCATION RW #5
CALC. BY
CHK. BY
FILE NO EA 06 2HT20
SEGREGATION YES NO
DATE
DATE 5-10-12

Segment (2) H=16

W=10.75' L=70.21' Rachel Washington

H=16.73' 4"=0.333' 10"=0.833' 16"=1.33'

405T #4@18"

Bar Length=(70.21-0.333)= 69.877'

# of bars = (16.73-0.333)÷1.5 = 11+1 = 12 bars

601E #6@10" x 15'-0"

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

JOB STAMP

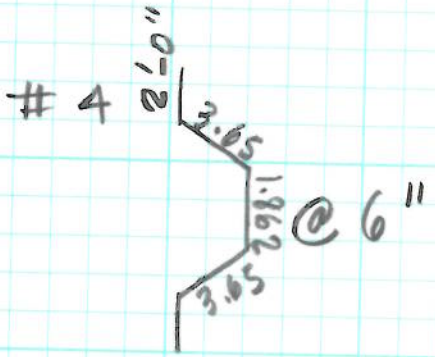
SHEET 1 OF 1

Pedestal

Rebar Quantity
RW # 3 & 5

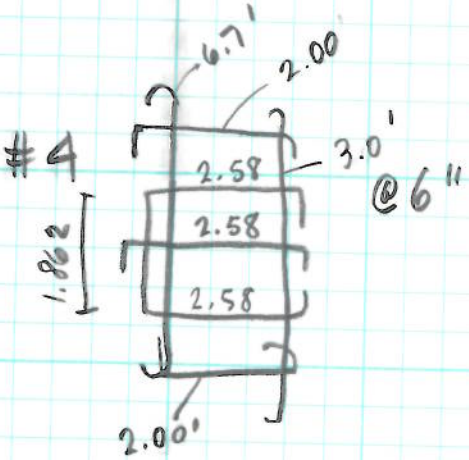
EA 06-2HT201

Rachel Washington 5-29-12



$\ell = 2(2') + 2(3.65) + 1.862 = 13.162'$

# of bars = $(5' - 0.333') \div 0.5' = 9 + 1 = 10$ bars



#4 90° hook = 3.5" = 0.292'

#4 Seismic hook = 7.5" = 0.625'

$\ell = 6.7 + 0.625' = 7.325'$

$\ell = 2.0 + 0.292 + 0.625 = 2.917'$

$\ell = 2.0 + 0.292 + 0.625 = 2.917$

$\ell = (2.58)2 + 1.862 + 2(.292) = 2.917$

$\ell = 2.58 + 0.292 + 0.625 = 3.497'$

$\ell = 3.0' + (0.625)2 = 4.25'$

$\ell_{Tot} = 23.823'$

# of bars = 10 bars

POSTED BY DATE POSTED TO

CEM-4801 (HC-52 REV. 11/92)

STRUCTURAL CONCRETE, RETAINING WALL 2
Assume limits for Removal Sections F,G,H,J,K Assume batter neglible.

	SECTION	Length (lf)	Design H (ft)	Bottom of Ftg Elev (ft)	TOP OF Wall Elevation (ft) @ Beginning Sta	FOOTING HEIGHT (ft) "F"	FOOTING WIDTH (ft) "W"	Key Volume (cy)	Step Volume (cy)	STEM CONCRETE (cy)	FOOTING CONCRETE (cy)	VOLUME (cy)
RETAINING WALL 2	F (assume 70%)	30	14	275.03	290.87	1.17	8.00	5.19	0.53	16.30	10.37	22.67
(Fresno Street Lt)	G	30	12	276.83	290.87	1.17	7.17	4.44	0.53	14.30	9.29	28.57
ajacent to RW 1,3,5	H	30	10	278.83	290.87	1.17	6.17	3.70	0.50	12.08	7.99	24.28
	J	10	8	281.03	290.87	1.17	5.17	1.23		3.21	2.23	6.68
						AVE H (ft)	WIDTH (ft) (assume "B" of H=8)	Assumed Key Volume (sqft)				
	K	20	GW	282.8	290.87	8.07	3.50	2.00				22.40
										"Retaining Wall #2" =		**104.6 CY**

(at Fresno Street Underpass)

TOTAL "RW 2" Concrete Removal = 105 CY

STATIONING									Page 1 of 2
RW 1									
Beginning STA	Ending STA	Bottom of Ftg Elev (ft)	TOP OF WALL 1 ELEV (ft) at beginning Sta (assume linear)	OG ELEVATION (ft) ave	Length (ft)	KEY Concrete Volume (CY)	EXCAVATION (cy)	Volume of Retaining Wall (cy)	Volume from Top of wall to top of lower wall (cy)
12 + 00	12 + 20	272.5	282.75	287	20	0.66	129.95	16.43	44.54
12 + 20	12 + 40	272.5	282.04	287	20	1.48	128.11	17.14	51.11
12 + 40	12 + 60	270	281.33	287	20	1.48	150.13	18.74	57.67
12 + 60	12 + 63.83	270	280.62	287	3.83	0.28	27.26	3.92	12.30
12 + 63.83	12 + 80	270	280.49	286.5	16.17	1.20	57.04	16.43	
12 + 80	13 + 00	267.5	279.91	285	20	1.48	86.43	22.11	
13 + 00	13 + 20	267.17	279.20	285	20	1.48	106.58	28.54	
13 + 20	13 + 32.96	264.33	278.49	283	13	0.96	81.97	19.81	
13 + 32.96	13 + 80	264.33	278.03	282	47	3.48	439.56	70.89	111.94
13 + 80	14 + 20	261.33	276.37	280	40	2.96	378.85	62.83	95.19
14 + 20	14 + 30.21	261.66	274.95	277	10.21	0.76	92.48	11.70	24.30
14 + 30.21	15 + 00	261.66	274.59	274	69.79	5.17	280.70	78.81	
15 + 00	15 + 40	259	272.11	272.5	40	2.96	181.68	45.51	
15 + 40	15 + 75.84	259	270.69	271	36	2.65	117.86	34.16	
15 + 75.84			269.42		376				
			269.42				2258.61		
RW 3									
11 + 17.46	11 + 39.53	278.5	287.89	287.5	22	0.73	**58.29**	17.31	
11 + 39.53	11 + 60	278.5	287.85	287.5	20	0.67	53.81	16.02	
11 + 60	12 + 00	276	287.81	286.5	40	2.96	133.70	38.34	
12 + 00	12 + 55	276	287.81	286.5	55	4.07	164.49	52.72	
12 + 55	12 + 63.83	273.75	287.62	286.5	9	0.65	40.35	10.36	
12 + 63.83			287.6		146				
							450.65		
RW 5									
13 + 32.96	13 + 60	273.75	287.6	282	27	2.00	76.24	31.69	
13 + 60	14 + 30.21	270.5	288.14	280	70	5.20	320.50	125.45	
14 + 30.21			289.54		97				
							396.7		
						43.31	3105.99	738.92	397.04

Assume Backfill = Excavation - Vol Top to top of walls - Vol RW Comcrete

RETAINING WALL 1, 3, 5 BACKFILL	**=**	**1927 CY**

STATIONING															
RW 1															
Beginning STA	Ending STA	Bottom of Ftg Elev (ft)	Ave Sidewalk Elev (ft) top of wall	Ave Sidewalk Elev (ft) Gutter	TOP OF WALL 1 ELEV (ft) at beginning Sta (assume linear)	OG ELEVATION (ft) ave	Design H (ft)	Length (ft)	"W"	Ave Height Section 1 (ft)	Ave Height Section 2 (ft)	Ave Height Section 3 (ft)	"C"	Stem Width (ft)	"F"
12 + 00	12 + 20	272.5	281.55	278.67	282.75	287	8	20	6.50	6.17	15.31	calc'd in wall 3	2.00	1.33	1.33
12 + 20	12 + 40	272.5	281.14	277.43	282.04	287	10	20	7.50	4.93	15.31	calc'd in wall 3	2.25	1.42	1.33
12 + 40	12 + 60	270	280.73	276.19	281.33	287	10	20	7.50	6.19	17.81	calc'd in wall 3	2.25	1.42	1.33
12 + 60	12 + 63.83	270	280.33	274.95	280.62	287	12	3.83	9.50	4.94	17.81	calc'd in wall 3	2.75	1.50	1.33
12 + 63.83	12 + 80	270	280.10	274.32	280.49	286.5	12	16.17	9.50	4.32	10.20		2.75	1.50	1.33
12 + 80	13 + 00	267.5	279.87	273.70	279.91	285	12	20	9.50	6.19	12.06		2.75	1.50	1.33
13 + 00	13 + 20	267.17	279.25	272.49	279.20	285	14	20	12.50	5.32	11.68		3.00	1.58	1.67
13 + 20	13 + 32.96	264.33	277.71	270.45	278.49	283	14	13	12.50	6.12	13.93		3.00	1.58	1.67
13 + 32.96	13 + 80	264.33	276.71	269.37	278.03	282	14	47	12.50	5.04	23.81	calc'd in wall 5	3.00	1.58	1.67
13 + 80	14 + 20	261.33	275.72	268.29	276.37	280	14	40	12.50	6.96	26.81	calc'd in wall 5	3.00	1.58	1.67
14 + 20	14 + 30.21	261.66	273.32	266.86	274.95	277	12	10.21	9.50	5.19	26.48	calc'd in wall 5	2.75	1.50	1.33
14 + 30.21	15 + 00	261.66	272.12	266.47	274.59	274	12	69.79	9.50	4.81	11.69		2.75	1.50	1.33
15 + 00	15 + 40	259	270.92	266.08	272.11	272.5	12	40	9.50	7.07	12.40		2.75	1.50	1.33
15 + 40	15 + 75.84	259	269.37	265.06	270.69	271	10	36	7.50	6.06	11.06		2.25	1.42	1.33
15 + 75.84					269.42			376							
					269.42										
RW 3					TOP OF WALL 3 ELEV (ft) at beginning Sta										
11 + 17.46	11 + 39.53	278.5	286.855	283.38	287.89	287.5	8	22	6.50			8.39	2.00	1.33	1.33
11 + 39.53	11 + 60	278.5	286.855	283.38	287.85	287.5	8	20	6.50			8.35	2.00	1.33	1.33
11 + 60	12 + 00	276	286.715	281.87	287.81	286.5	10	40	7.50			9.5	2.25	1.42	1.33
12 + 00	12 + 55	276	286.715	281.87	287.81	286.5	10	55	7.50	calc'd in wall 1	calc'd in wall 1	9.50	2.25	1.42	1.33
12 + 55	12 + 63.83	273.75	286.61	280.735	287.62	286.5	12	9	9.50	calc'd in wall 1	calc'd in wall 1	11.75	2.75	1.50	1.33
12 + 63.83					287.6			146							
RW 5				Ave Sidewalk Elev (ft) mid wall	TOP OF WALL 5 ELEV (ft) at beginning Sta										
13 + 32.96	13 + 60	273.75	286.87	278.59	287.6	282	12	27	9.50	calc'd in wall 1	calc'd in wall 1	7.25	2.75	1.50	1.33
13 + 60	14 + 30.21	270.5	287.84	276.645	288.14	280	16	70	13.50	calc'd in wall 1	calc'd in wall 1	8.50	4.00	1.67	1.67
14 + 30.21					289.54			97							

RW 1,3,5 CONTINUTED

Ave Width Section 1 (ft)	Ave Width Section 2 (ft)	Ave Width Section 3 (ft)	KEY EXCAVATION (CY)	SECTION EXCAVATION (cy)
3.00	10.25		0.66	129.95
3.25	10.25		1.48	128.11
3.25	10.25		1.48	150.13
3.75	9.75		0.28	27.26
3.75	7.75		1.20	57.04
3.75	7.75		1.48	86.43
4.00	10.50		1.48	106.58
4.00	10.50		0.96	81.97
4.00	9.75		3.48	439.56
4.00	8.50		2.96	378.85
3.75	8.50		0.76	92.48
3.75	7.75		5.17	280.70
3.75	7.75		2.96	181.68
3.25	6.25		2.65	117.86
				2258.61
		8.50	0.73	58.29
		8.50	0.67	53.81
		9.50	2.96	133.70
		8.50	4.07	164.49
		10.50	0.65	40.35
				450.65
		10.50	2.00	76.24
		14.50	5.20	320.50
				396.7
			43.31	3149.30

RETAINING WALL TYPE 1

DESIGN H	6	8	10	12	14	16	18
W	5.75	6.50	7.50	9.50	12.50	13.50	14.50
C	1.75	2.00	2.25	2.75	3.00	3.50	4.00
B	4.00	4.50	5.25	6.75	9.50	10.00	10.50
F	1.33	1.33	1.33	1.33	1.67	1.67	1.67
F			1.33	1.33	1.67	1.67	1.67
key							
HEIGHT	0.67	0.67	1	1	1	1	1
WIDTH	1.33	1.33	2	2	2	2	2

RETAINING WALL 1,3,5 EXCAVATION = 3149 cy

STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 1 OF 1

JOB STAMP

ITEM: Concrete Quantity

LOCATION: RW # 3 & # 5

CALC. BY: Rachel Washington

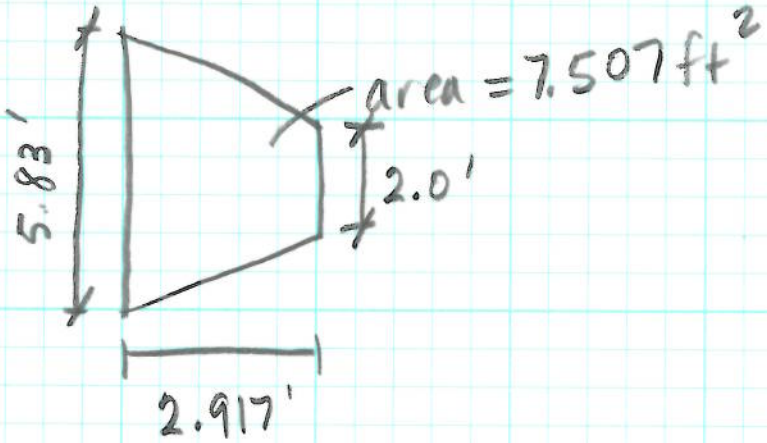
DATE: 5-29-12

EA 06-2HT20

SEGREGATION YES NO

pedestal Concrete

$$\text{Area} = \left[\left(7.507\ ft^2 * 5' \right) \div 27 \frac{yd^3}{ft^3} \right] (2ea) = 2.78\ yd^3$$



POSTED BY DATE POSTED TO

CEM-4801 (HC-52 REV. 11/92)

CHECKER QUANTITIES

EA 06-2HT201

RETAINING WALL 1,3,5

MAY 30, 2012

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION
QUANTITY CALCULATIONS
DC-CEM-4801 (OLD HC-12 REV. 11/93)

JOB STAMP

06-2AT201
Architectural Treatment
Quantity GRG 5/2012

RW #3

$\left(\frac{4.36+7.14}{2}\right) 146.37' = 841.62 \text{ ft}^2$

RW #5

$\left(\frac{9.21+15.02}{2}\right)(97.25) = 1178.18 \text{ ft}^2$

$\Sigma\ 2019.81 \text{ ft}^2$

Prepare and Stain Concrete Quantity.

RW #3

$45.16+50.16+54.64+60.17+65.68 = 275.81 \text{ ft}^2$

RW #5

$70.99+81.85+92.70+103.55+114.41 = 463.5 \text{ ft}^3$

$\Sigma\ 739.31 \text{ ft}^3$

Architectural Treatment

RW #1 $(.67)(375.84) = 251.81 \text{ ft}^2$

POSTED BY DATE CHECKED

STATE OF CALIFORNIA-DEPARTMENT OF TRANSPORTATION

SUMMARY-STRUCTURE EXCAVATION AND STRUCTURE BACKFILL

DS-D-0022 (REV. 02/11/08)

Estimating Section to forward to RE Pending File

STRUCTURE				BRIDGE NUMBER	DATE	CALCULATED BY
RW 1, 3, 5					5/14/2012	S. MORIMOTO
DISTRICT	COUNTY	ROUTE	EA NUMBER			CHECKED BY
6			06-2HT201			G.R.-GUTIERREZ

LOCATION	STRUCTURE EXCAVATION		STRUCTURE BACKFILL		PERVIOUS BACKFILL MATERI	
	ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK
RW 1. 3. 5	3149	3041	1927	1981		
TOTAL CY	**3149**	**3041**	**1927**	**1981**	**0**	**0**

BY GRG RW#1, 3 & 5 1 5

DATE 5/2012 SUBJECT Excavation & Backfill

DS-D 10 (REV 3/83)

(1) STA 11+20 – 11+60 L=40

Excav.: $[(5.5)(8.35) + (3)(5.35)]\,40 = 2479\ ft^3 = 91.81$ Cu yd.

Backfill: $[2(1)(1.33) + (4.17)(7.02) + (3)(4.02)]\,40 = 1759.73\ ft^3 = 65.17$ Cu yd.

(2) STA 11+60 – 12+00 L=40

Excav: $[(6.25)(10.77) + (3.25)(6.97)]\,40 = 3598.6\ ft^3 = 133.28$ Cu yd.

Backfill = $[2(1)(1.33) + (4.82)(9.44) + (3.25)(5.64)]\,40 = 2659.63\ ft^3$

$= 98.50$ Cu yd.

(3) STA 12+00 – 12+20 L=20

Excav: $[(12.96)(8.5) + (4.21)(10.45) + (3)(6.08)]\,20$

$= 5537.89\ ft^3 = 205.10$ Cu yd.

Backfill = $[(4.82)(11.63) + (1)(1.33) + (2.25)(4.46) + (5.95)(9.29) + (3.14)(7.96) + (1)(1.33) + (4.75)(3)]\,20$

$= [56.05 + 1.33 + 10.03 + 55.27 + 24.99 + 1.33 + 14.25]\,20$

$= (163.25)(20) = 3265\ ft^3 = 120.92$ Cu yd.

(4) STA 12+20 – 12+40 L=40

Excav: $[(10.67)(8.5) + (14.37)(10.45) + (3.25)(4.32) + 2(1.33)(.67)]\,40$

$= (256.68)(40) = 10267.34\ ft^3 = 380.27$ Cu yd.

Backfill = $[(1)(1.33) + (4.82)(9.34) + (2.25)(4.05) + (5.2)(1.33) + (9.11)(.25) + (1)(1.33) + (3.25)(2.99)]\,40$

$= [1.33 + 45.01 + 9.11 + 6.91 + 68.32 + 1.33 + 9.7]\,40$

$= (141.75)(40) = 5669.99\ ft^3 = 209.99$ Cu yd.

OSP 07 10.99.12

(5) STA 12+40 – 12+55 L=15

Excav: $[(10.65)(8.5) + (10.45)(16.65) + (3.25)(6.09)](15)$

$= 4264.65\ ft^3 = 157.95$ Cu yd.

Backfill: $[(1)(1.33) + (4.82)(9.32) + (2.25)(3.65) + (5.2)(1.33) + (9.02)(9.65) + (3.25)(4.76) + 1(1.33)]\ 15$

$= 2478.35\ ft^3 = 91.79$ Cu yd.

(6) STA 12+55 – 12+63.83 L=8.83

Excav: $[(\cancel{12.85}\ 12.6)(10.5) + (9.95)(16.6) + (3.25)(16.6)](8.83)$

$= \cancel{2917.60}\ 3126.21\ ft^3 = \cancel{108.05}\ 115.78$ Cu yd.

Backfill $= [(1)(1.33) + (6.33)(\cancel{9.27}\ ^{11.52}) + (2.75)(\cancel{3.65}\ ^{5.9}) + (4.7)(1.33) + (8.52)(9.65) + (3.25)(4.76) + 1(1.33)][8.83]$

$= \cancel{1540.03}\ 1728.43\ ft^3 = \cancel{57.33}\ 64.01$ Cu yd.

(7) STA 12+63 – 12+80 L=17

Excav: $[(7.75)(10.32) + (3.75)(4.88) + (2)(1)](17)$

$= 1706.07\ ft^3 = 63.18$ Cu yd.

Backfill $= [2(1)(1.33) + (6.33)(9) + (3.75)(3.55)](17)$

$= 1240.02\ ft^3 = 45.92$ Cu yd.

(8) STA 12+80 – 13+00 L=20

Excav: $[(7.75)(12.36) + (3.75)(5.85) + (2)(1)]\ 20$

$= 2374.55\ ft^3 = 88.68$ Cu yd.

Backfill $= [(2)(1)(1.33) + (6.25)(11.03) + (3.75)(4.52)](20$

$= 1770.95\ ft^3 = 65.59$ Cu yd.

(9) STA 13+00 - 13+20 L = 20

Excav: $[(10.5)(12.07) + (4)(5.11) + (2)(1)]\ 20$

$= 2983.5\ ft^3 = 110.5\ Cu\ yd.$

Backfill $= [(2)(1)(1.66) + (9.03)(10.41) + (4)(3.45)]\ 20$

$= 2222.44\ ft^3 = 82.31\ Cu\ yd.$

(10) STA 13+20 - 13+33 L = 13'

Excav: $[(10.5)(14.33) + (4)(6.94) + (2)(1)]\ 13$

$= 2342.92\ ft^3 = 86.77\ Cu\ yd.$

Backfill $= [(2)(1)(1.66) + (8.94)(12.67) + (4)(5.28)]\ 13$

$= 1790.22\ ft^3 = 66.30\ Cu\ yd.$

(11) STA 13+33 + 13+60 L = 27

Excav: $[(10.5)(7.87) + (9.75)(17.29) + (4)(5.98) + (2)(1)]\ 27$

$= 7482.57\ ft^3 = 277.13\ Cu\ yd.$

Backfill $= [(1)(1.33) + (6.22)(6.54) + (2.75)(3.04) + (.25)(1.66) + (8.22)(12.13) + (4)(4.32) + (1)(1.66)]\ 27$

$= 4574.67\ ft^3 = 169.43\ Cu\ yd.$

(12) STA 13+60 - 13+80 L = 20

Excav: $[(14.0)(9.29) + (9.5)(15.46) + (4)(4.95) + (2)(2)(1)]\ 20$

$= 6014.6\ ft^3 = 222.76\ Cu\ yd.$

BACKFILL: $[(1)(1.66) + (9.31)(7.63) + (3.5)(5.04) + (.5)(4.51) + (7.5)(11.21) + (4)(3.29) + (1)(1.66)]\ 20$

$= 3831.94\ ft^3 = 141.92\ Cu\ yd$

(13) STA 13+80 – 14+20 L=40

Excavation: [(14)(7.58) + (9.5)(16.75) + (4)(6.9) + 2(2)(1)] 40
= 11873.8 ft^3 = 439.77 Cu yd.

Backfill: [(1)(1.66) + (9.31)(5.92) + (3.5)(3.79) + (5)(7.51) + (7.43)(12.95)
+ (4)(5.24) + (1)(1.66)] 40

= 7705.34 ft^3 = 285.38 Cu yd.

(14) STA 14+20 – 14+30.21 L=10.21

Excav: = [(14.5)(5.9) + (9)(14.74) + (3.75)(5) + 2(2)(1)] 10.21
= 2460.20 ft^3 = 91.11 Cu yd.

Backfill = [(1)(1.66) + (9.31)(4.24) + (3.5)(1.41) + (2.25)(1.33)
+ (6.28)(10.58) + (3.75)(3.67) + 1(1.33)] 10.21

= 1333.39 ft^3 = 49.38 Cu yd.

(15) STA 14+30 – 15+00 L=70

Excav: [(7.75)(11.66) + (3.75)(5) + (2)(1)] 70
= 7778.05 ft^3 = 288.07 Cu yd.

Backfill: [(2)(1)(1.33) + (6.28)(10.33) + (3.75)(3.67)] 70
= 5690.64 ft^3 = 210.76 Cu yd.

(16) STA 15+00 – 15+40 L = 40

Excav: [(7.75)(11.92) + (3.75)(6.98) + (2)(1)] 40
= 4822.2 ft³ = 178.6 Cu yd.

Backfill = [(2)(1)(1.33) + (6.27)(10.59) + (3.75)(5.65)] 40
= 3609.87 ft³ = 133.69 Cu yd.

(17) STA 15+40 – 15+75.84 L = 35.84

Excav: [(6.25)(10.35) + (3.25)(7.12) + (1.33)(.67)] 35.84
= 3179.67 ft³ = 117.76 Cu yd.

Backfill: [(2)(1)(1.33) + (4.84)(9.02) + (3.25)(5.79)] 35.84
= 2334.41 ft³ = 86.45 Cu yd.

Summary

Σ Excavation: 3040.79 Cu yd.

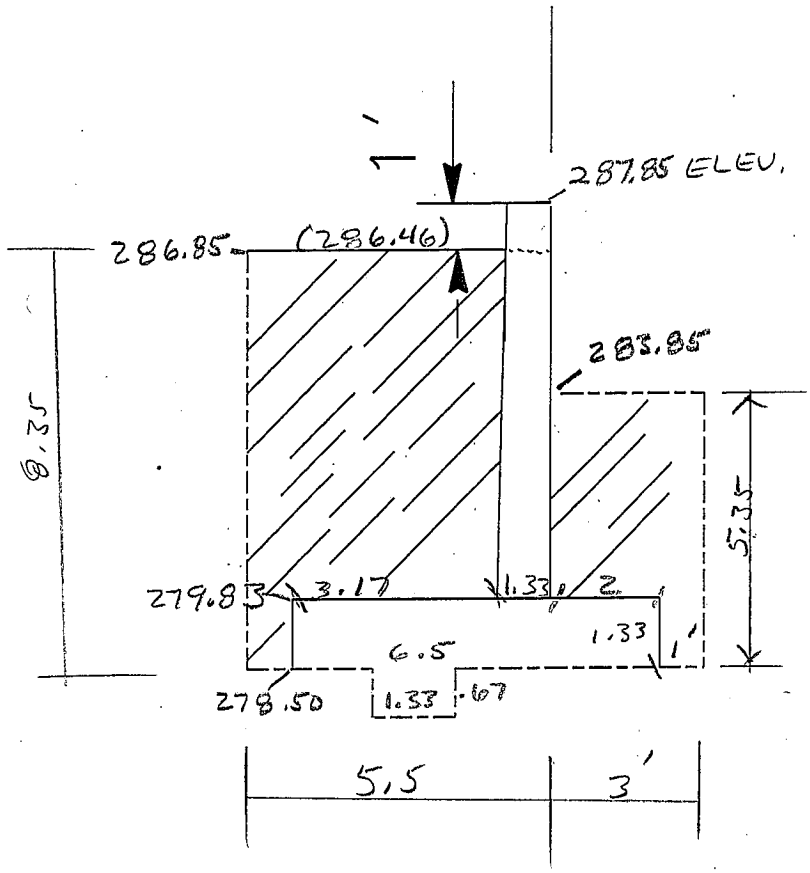
Σ Backfill: 1980.83 Cu yd

BACKFILL

EXCAVATION

① STA 11+20–11+60 L=40 H=8'

RW LOL #3

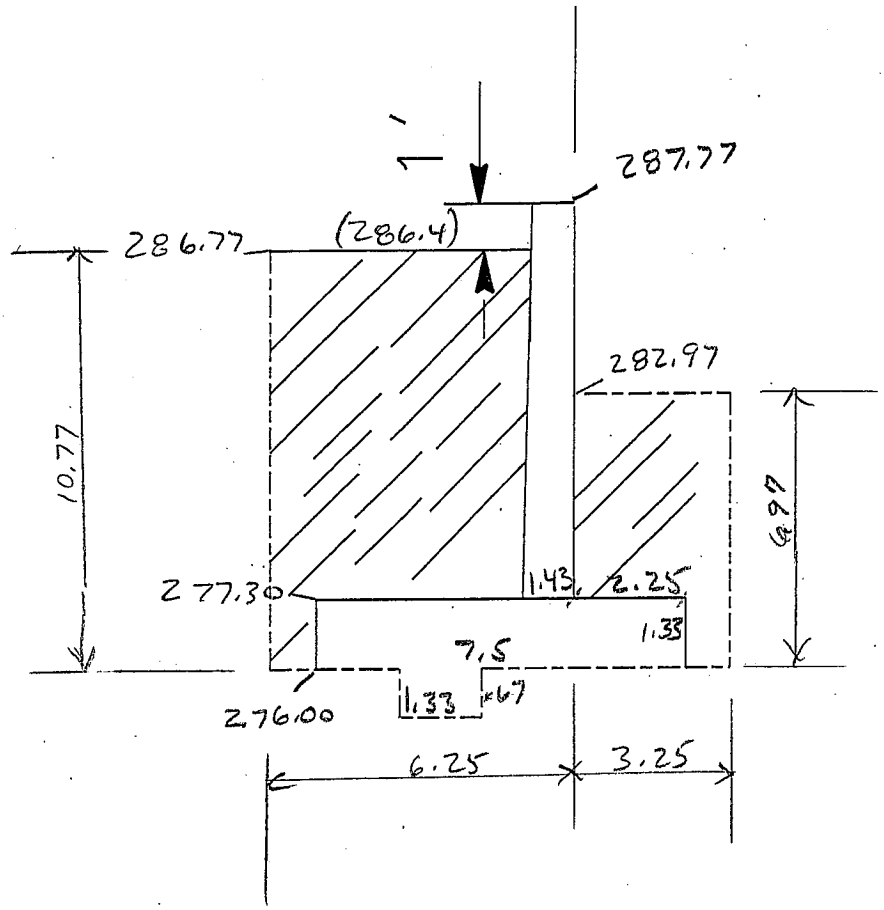


BACKFILL

EXCAVATION

(2) STA 11+60 – 12+00 H=10 L=40

RW LOL #3

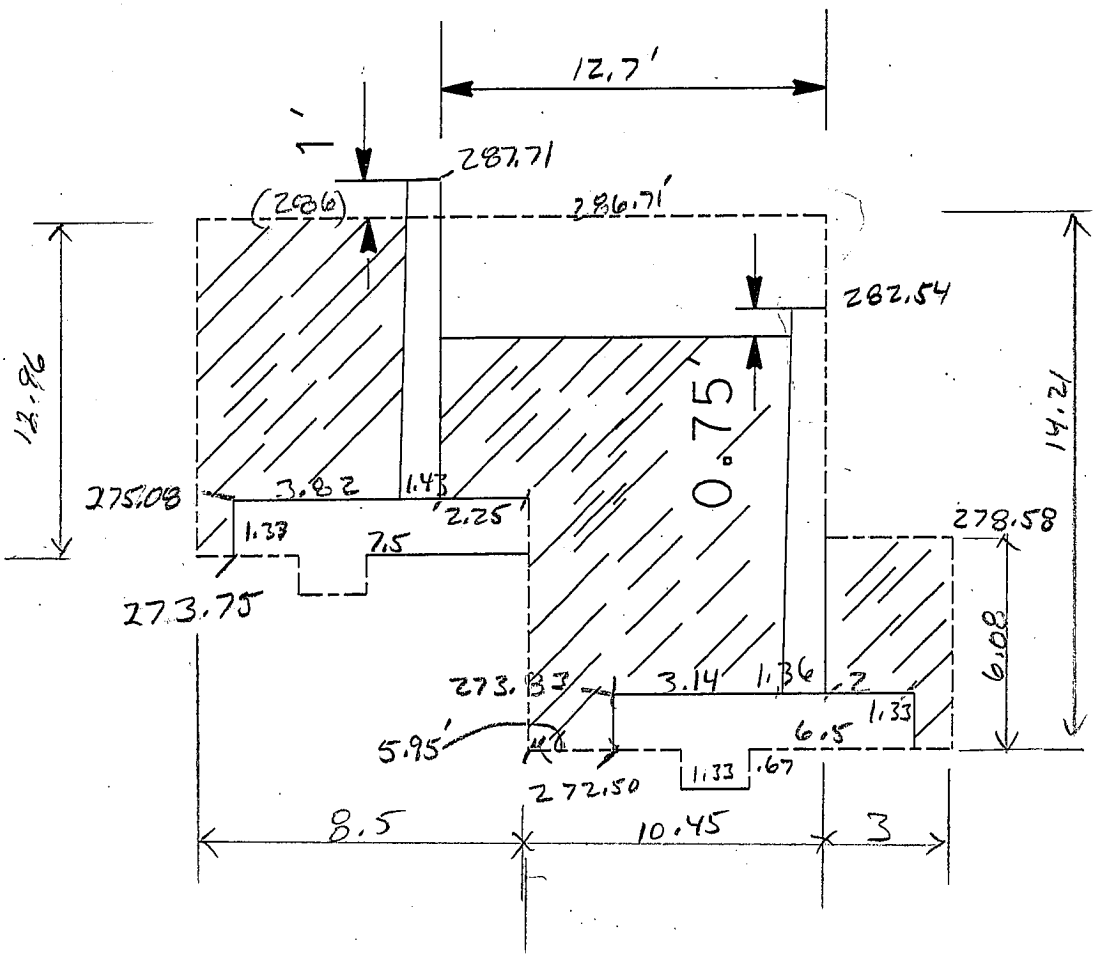


BACKFILL

EXCAVATION

③ STA 12+00 – 12+20 L=20

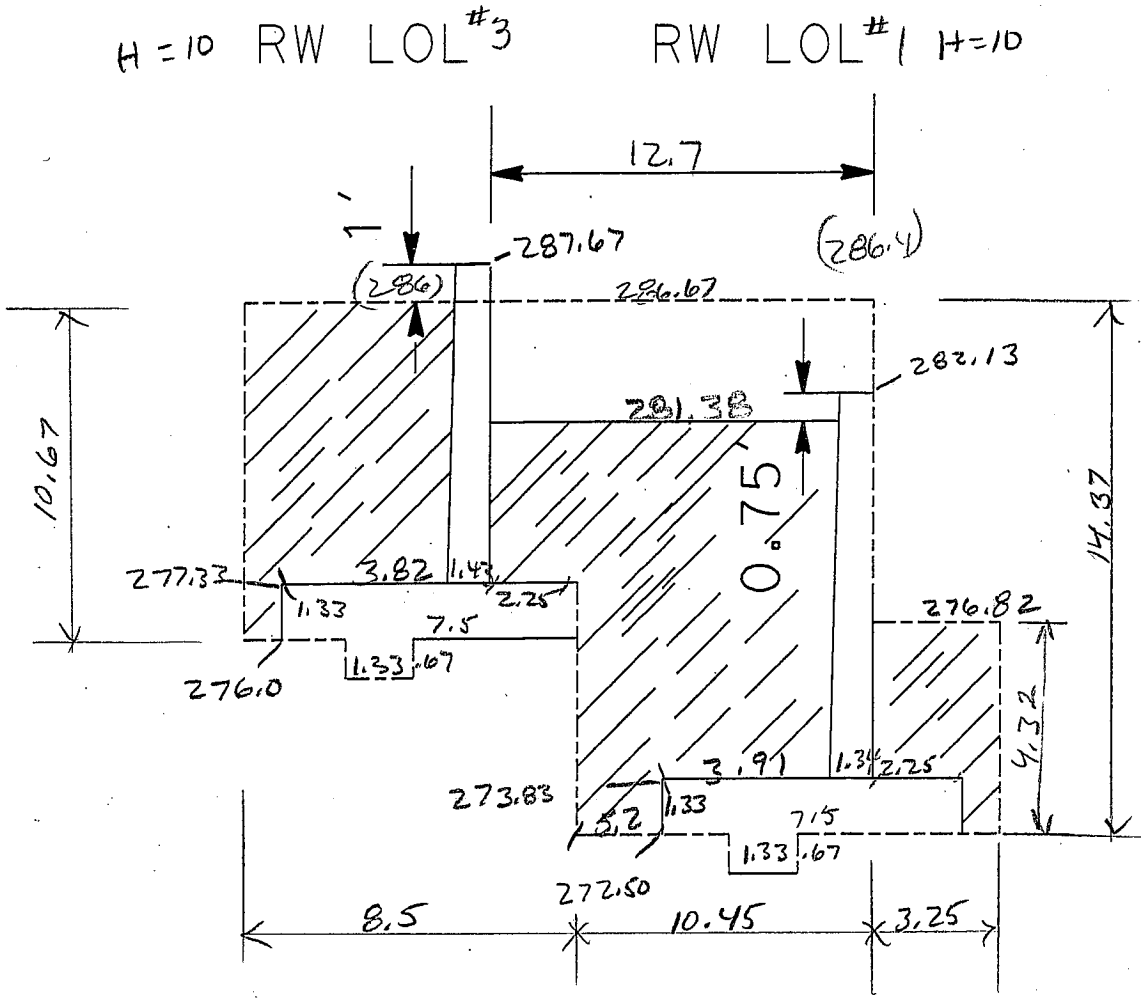
H=10 RW LOL#3 RW LOL#1 H=8



④ STA 12+20 – 12+40 L=40

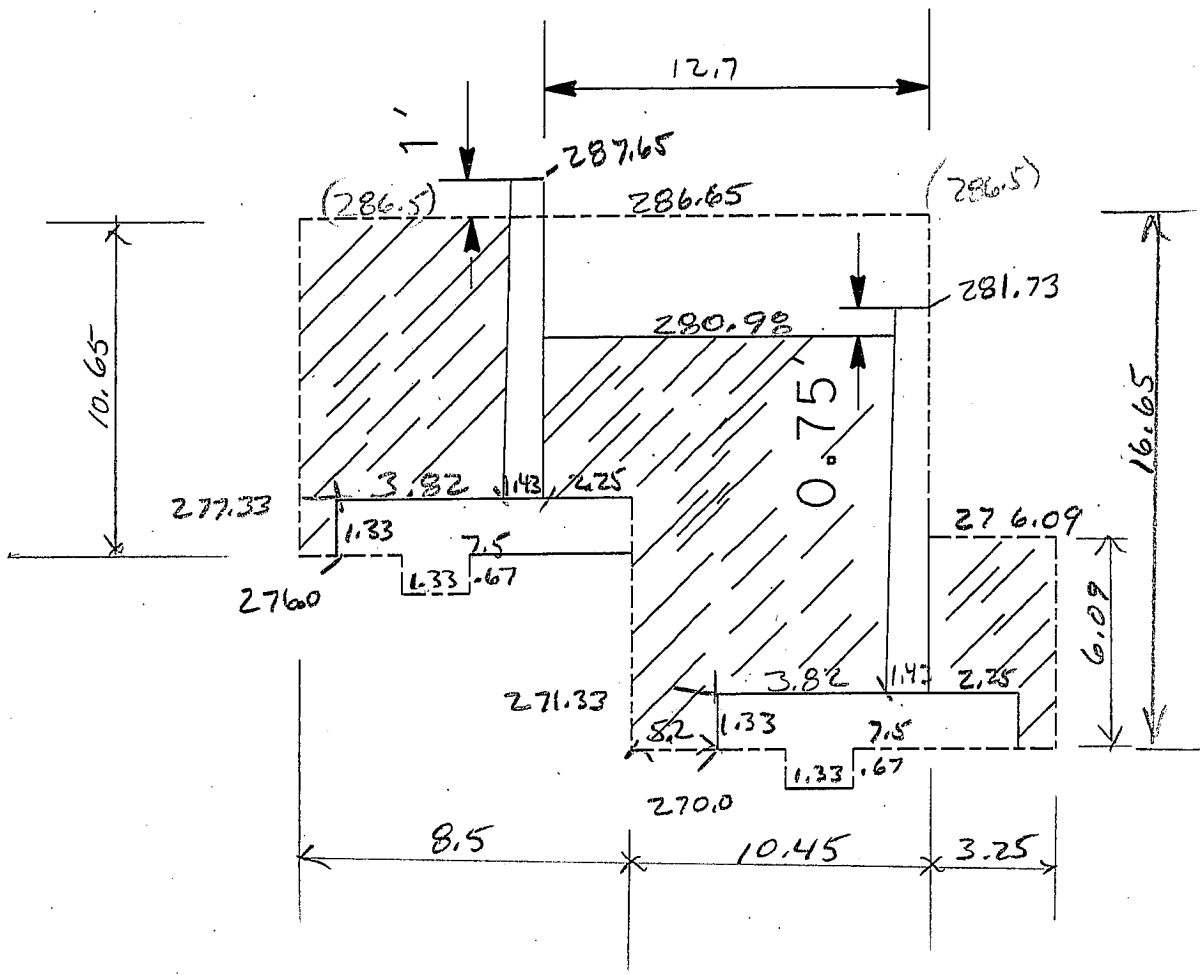
BACKFILL

EXCAVATION



BACKFILL (5) STA 12+40 – 12+55 L=15

EXCAVATION

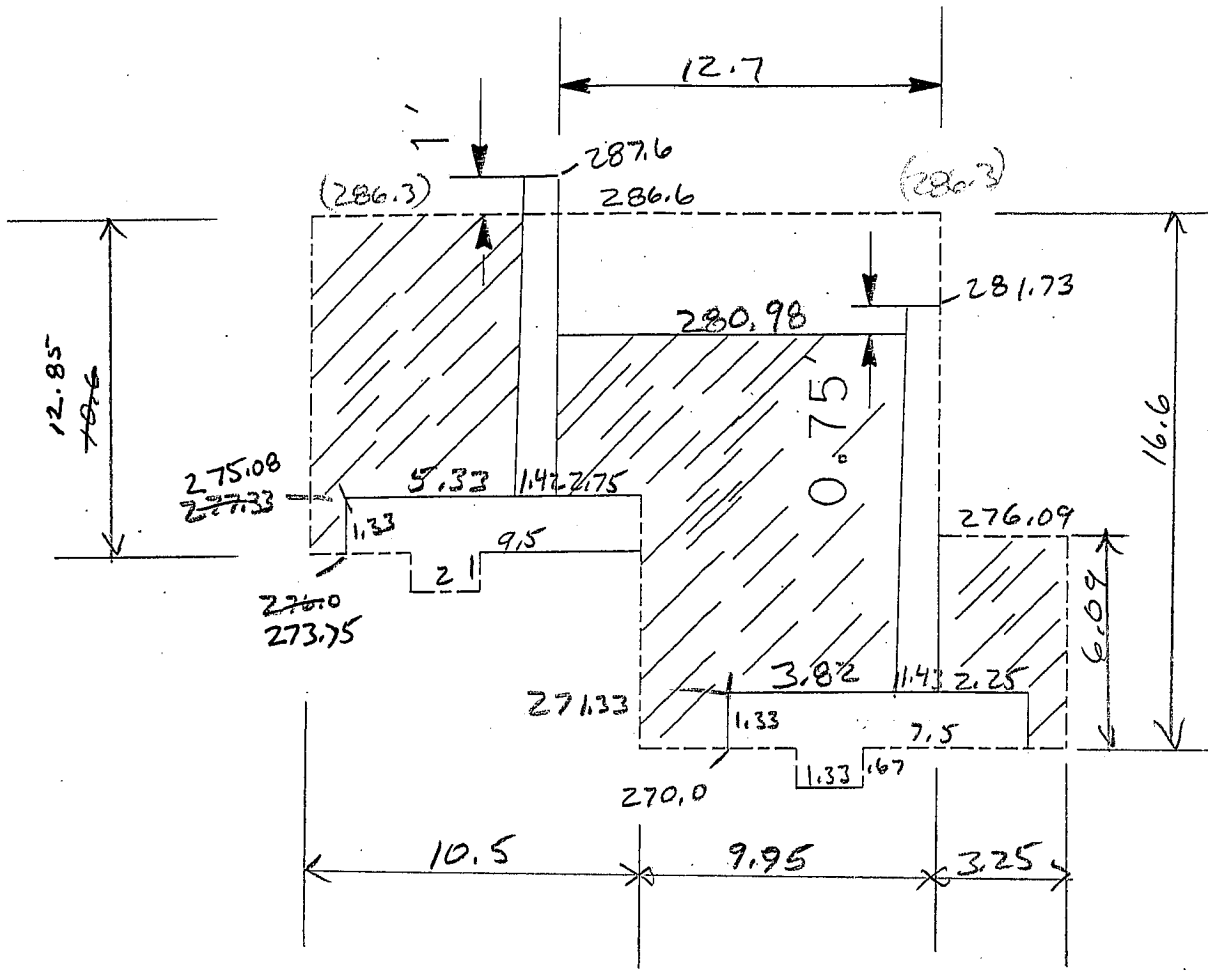


BACKFILL

EXCAVATION

⑥ STA 12+55 – 12+63.83 ED RW#3 L = 8.83

H=12 RW LOL#3 RW LOL#1 H=10



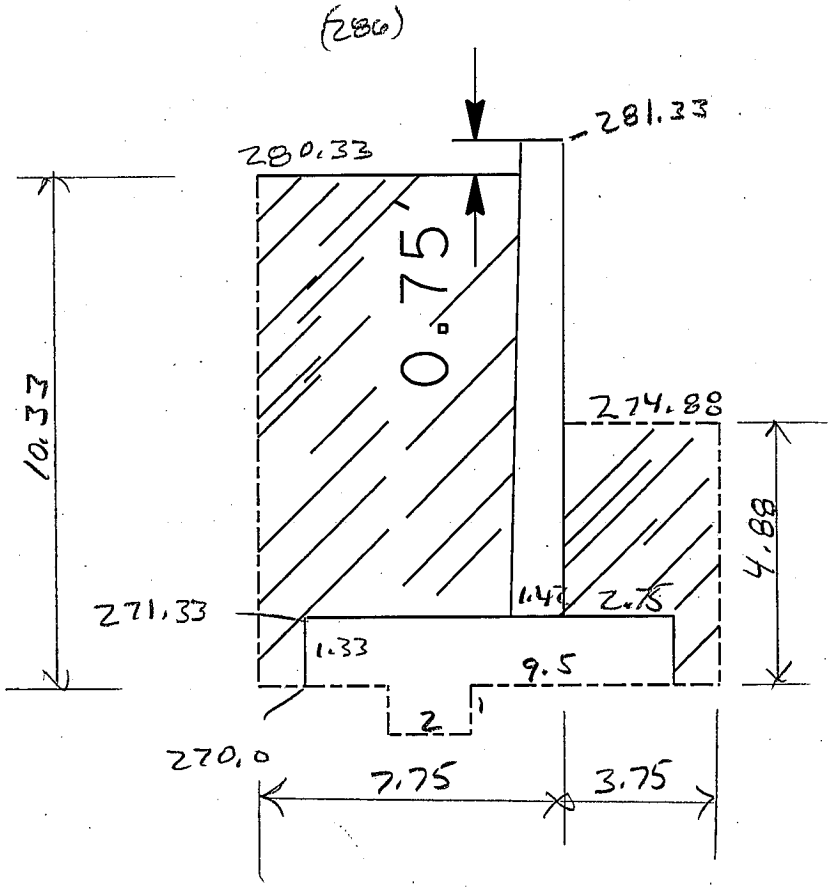
BACKFILL

EXCAVATION

Check Abut offset

⑦ STA 12+63 - 12+80 H = 12 L = 17

RW LOL #1

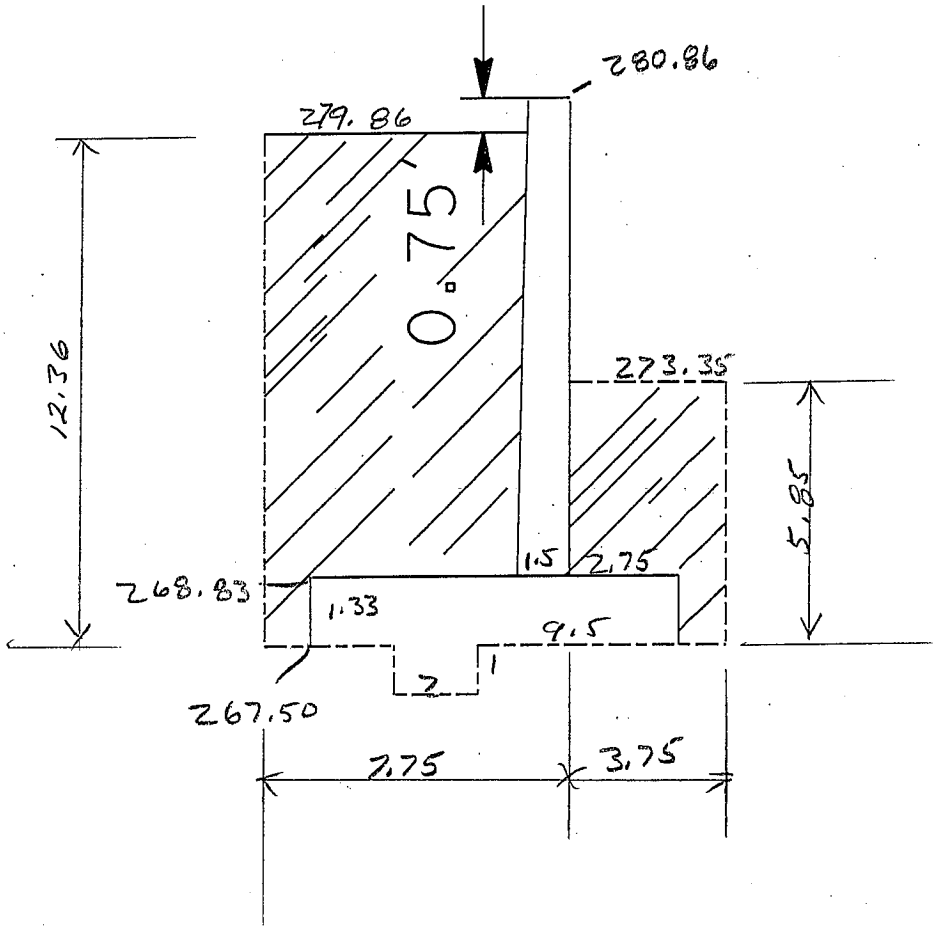


BACKFILL ⑧ STA 12+80 – 13+00 H = 12 L = 20

EXCAVATION RW LOL

Check ABUT OFFSET

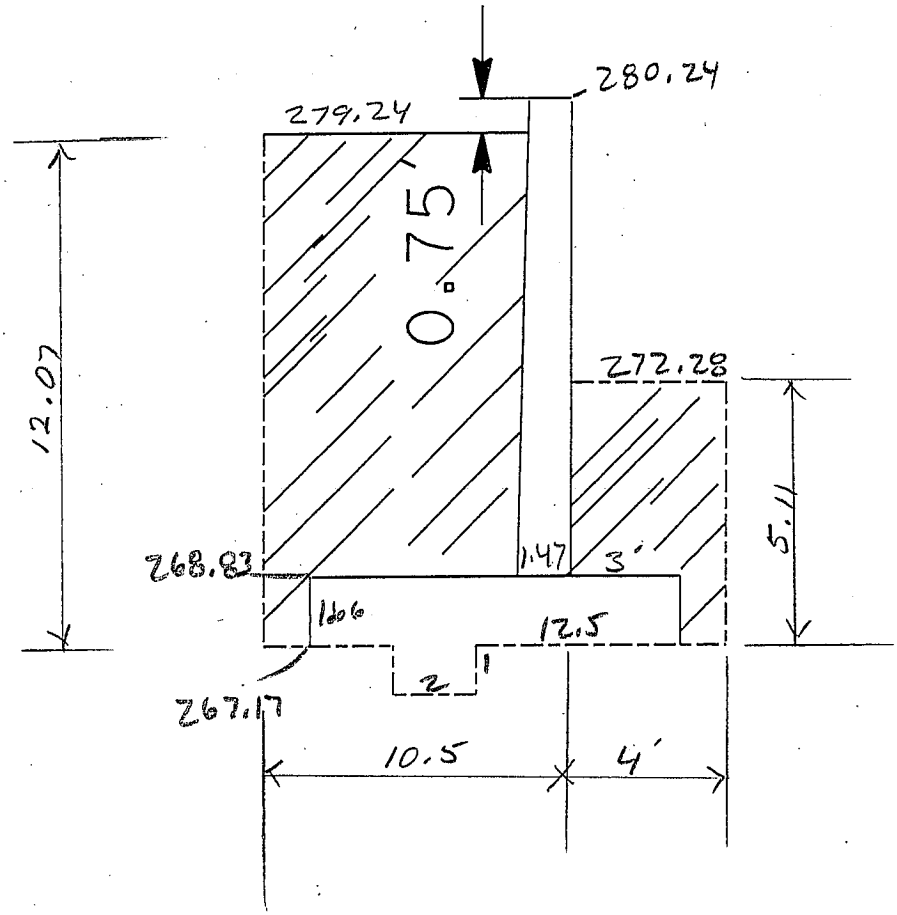
(285)



BACKFILL (9) STA 13+00 – 13+20 H = 14 L=20

EXCAVATION RW LOL #1

Check ABUT OFFSET



BACKFILL

EXCAVATION

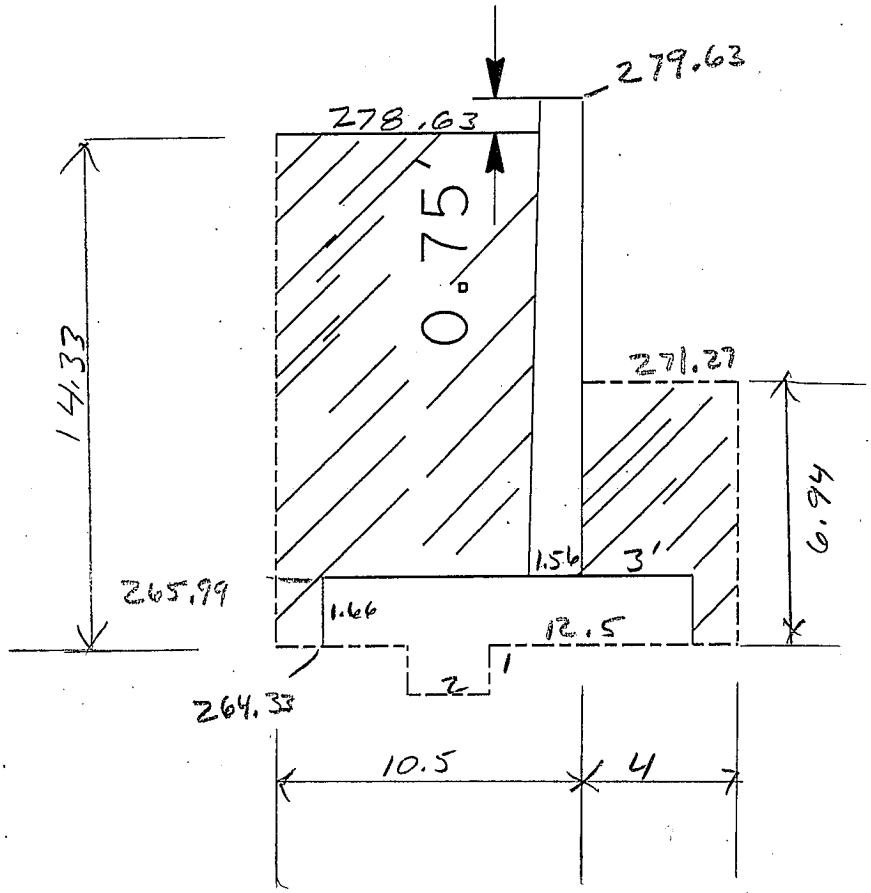
(10) STA 13+20 – 13+33 ℄ BB of RW #5

H = 14 L = 13'

RW LOL #1

Check ABUT OFFSET

(282.165)

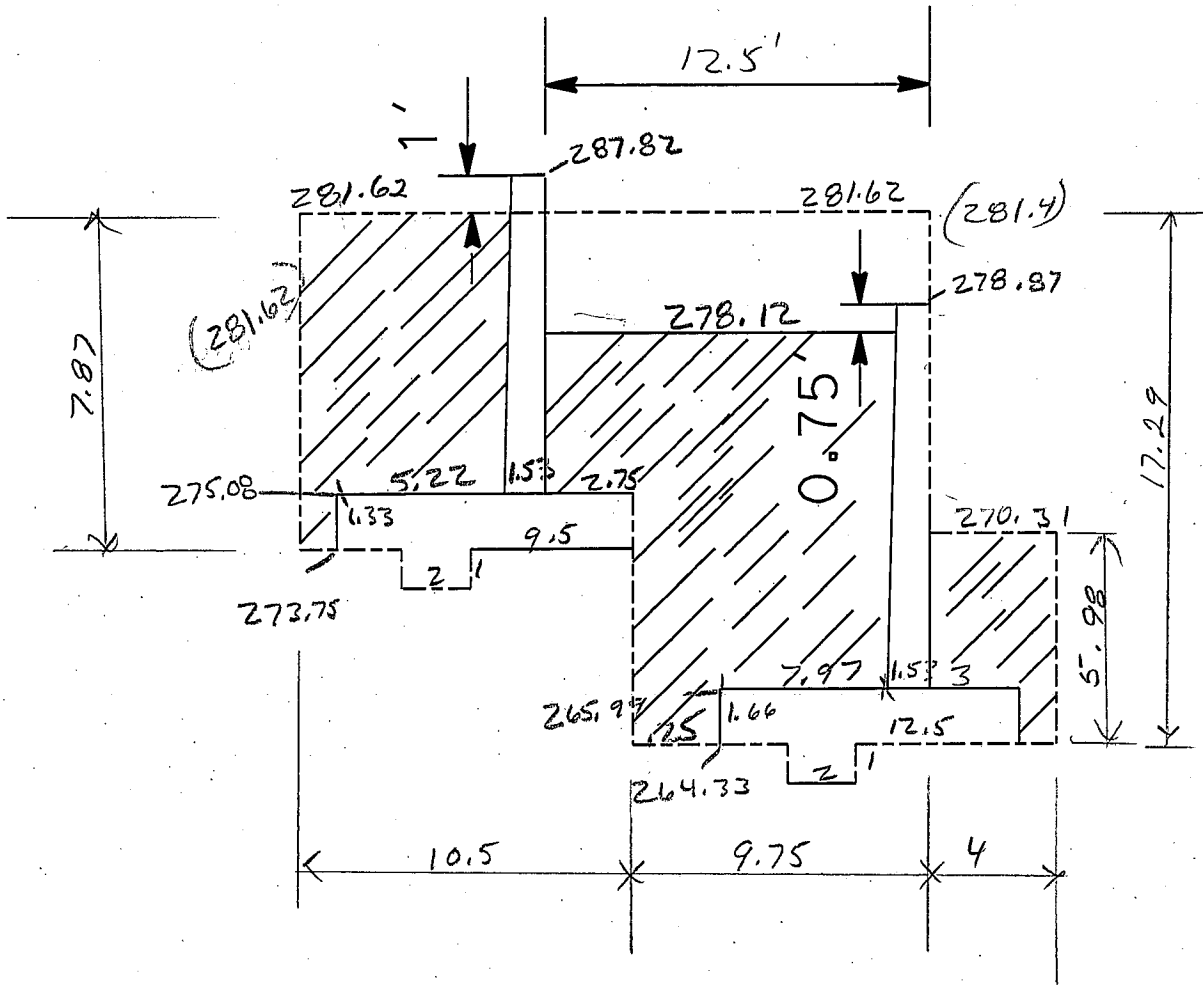


(11) STA 13+33 – 13+60 L=27

BACKFILL

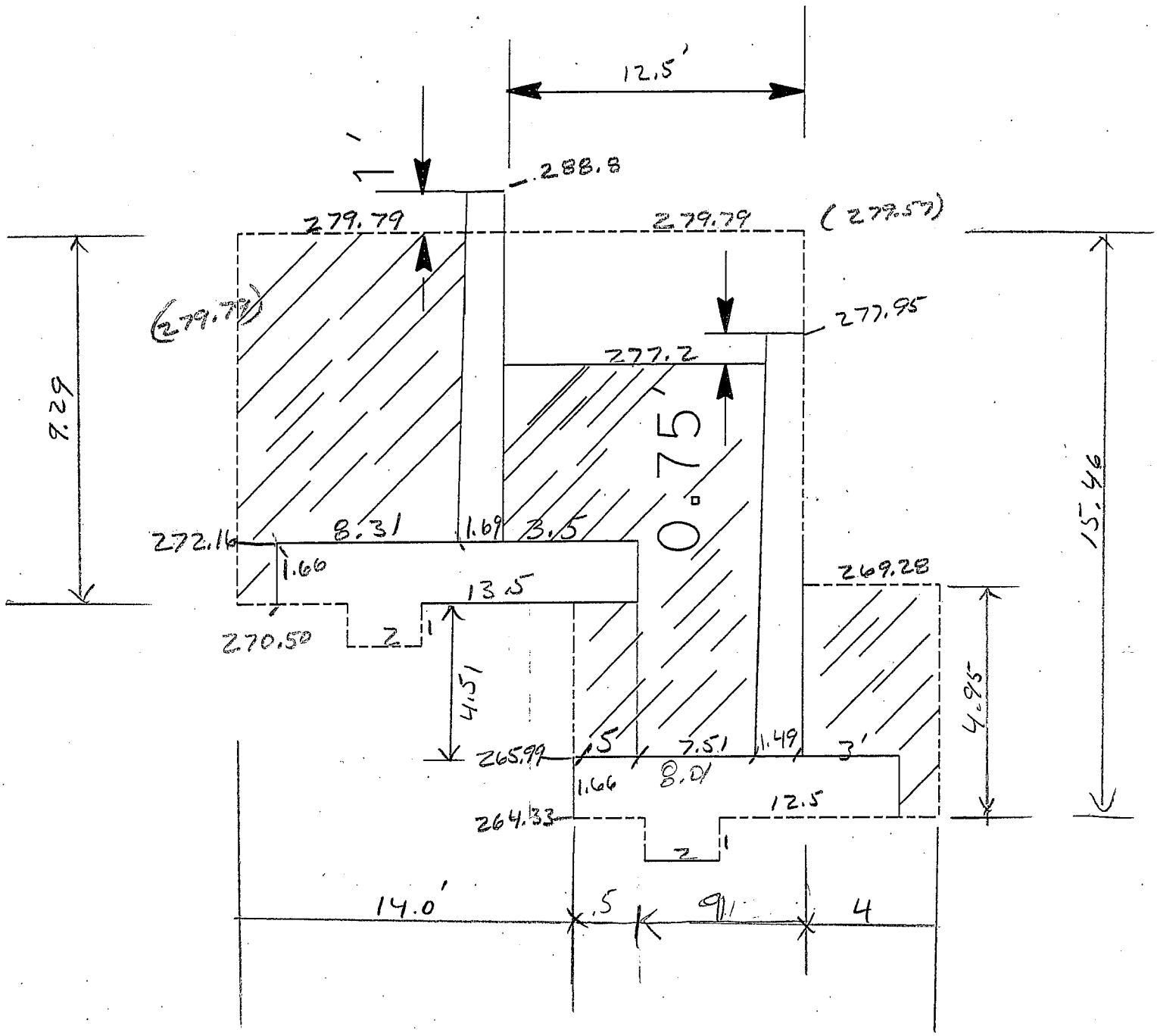
EXCAVATION

H=12 RW LOL#5 RW LOL#7 H=14



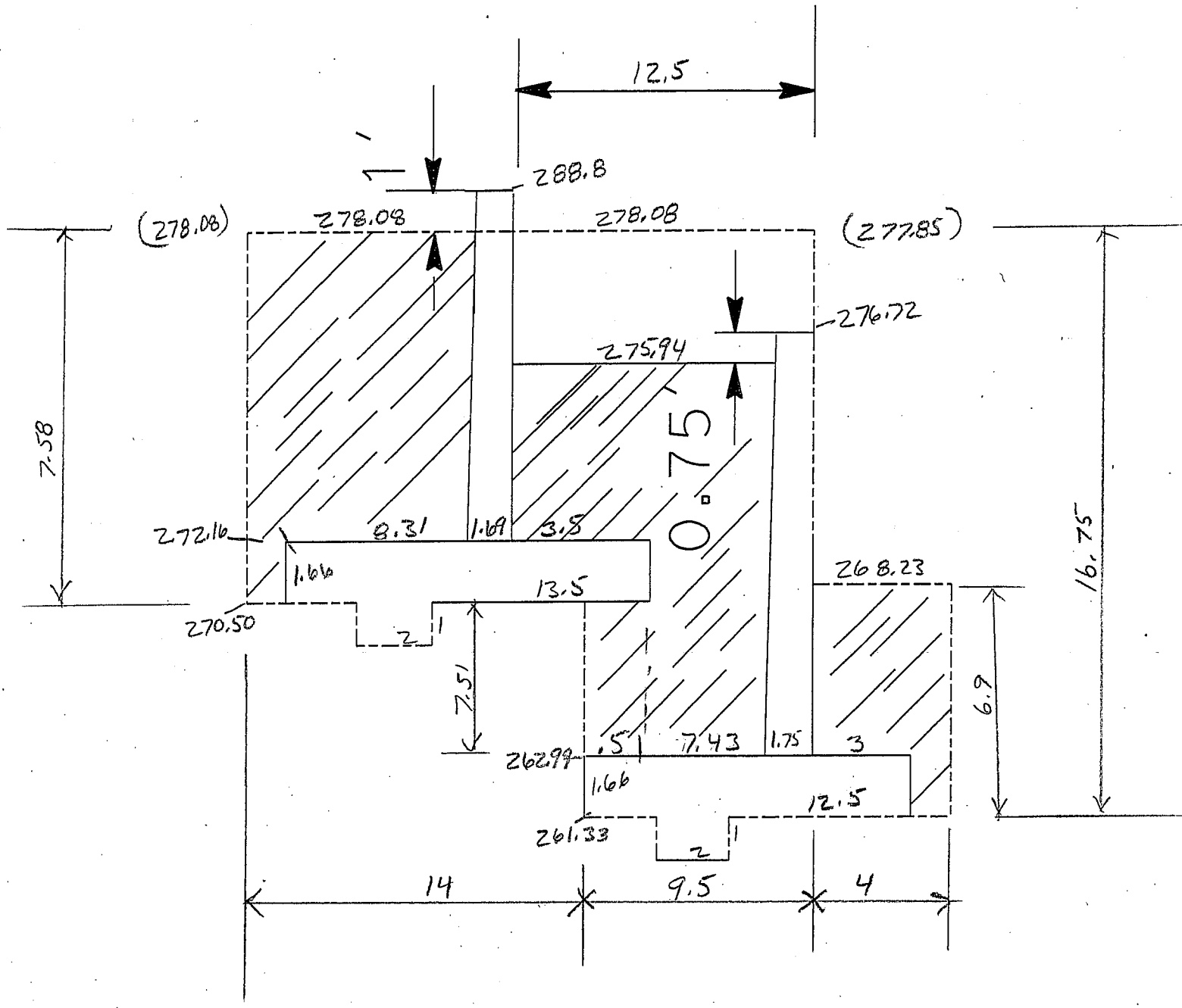
(12) STA 13+60-13+80 L=20

H=16 RW LOL #5 RW LOL #1 H=14



(13) STA 13+80 – 14+20 L=40

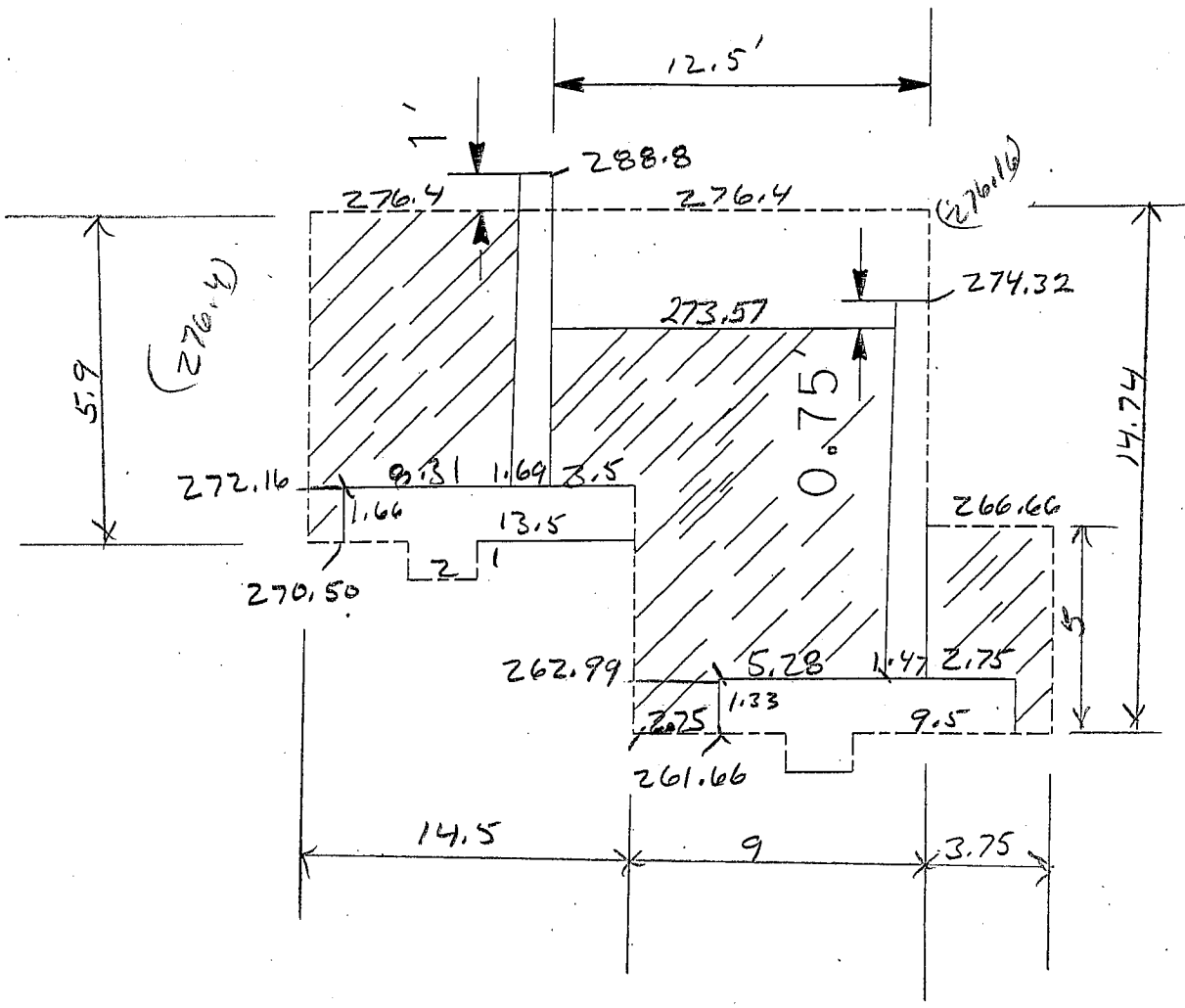
H=16 RW LOL #5 RW LOL #1 H=14



BACKFILL

EXCAVATION

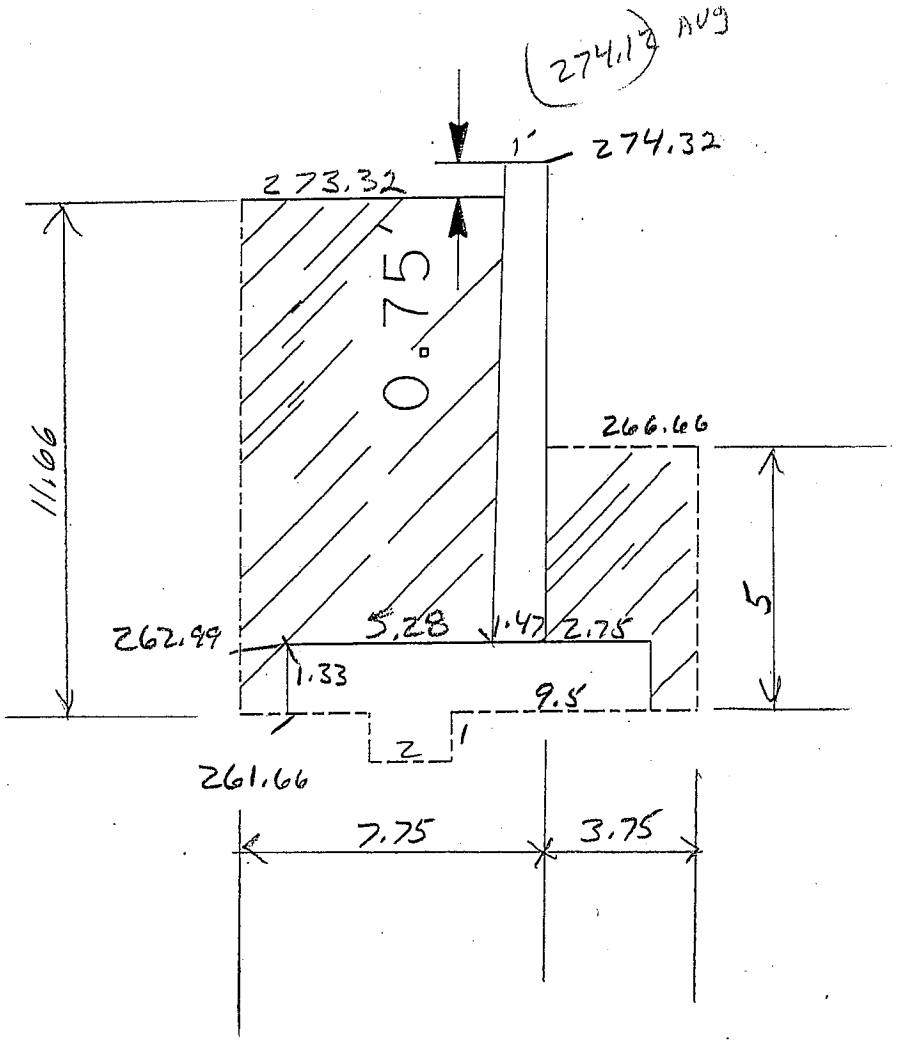
(14) STA 14+20 - 14+30.21 L = 10.21'
END RW #5



BACKFILL (15") STA 14+30 - 15+00 H = 12 L = 70

EXCAVATION

RW LOL #1

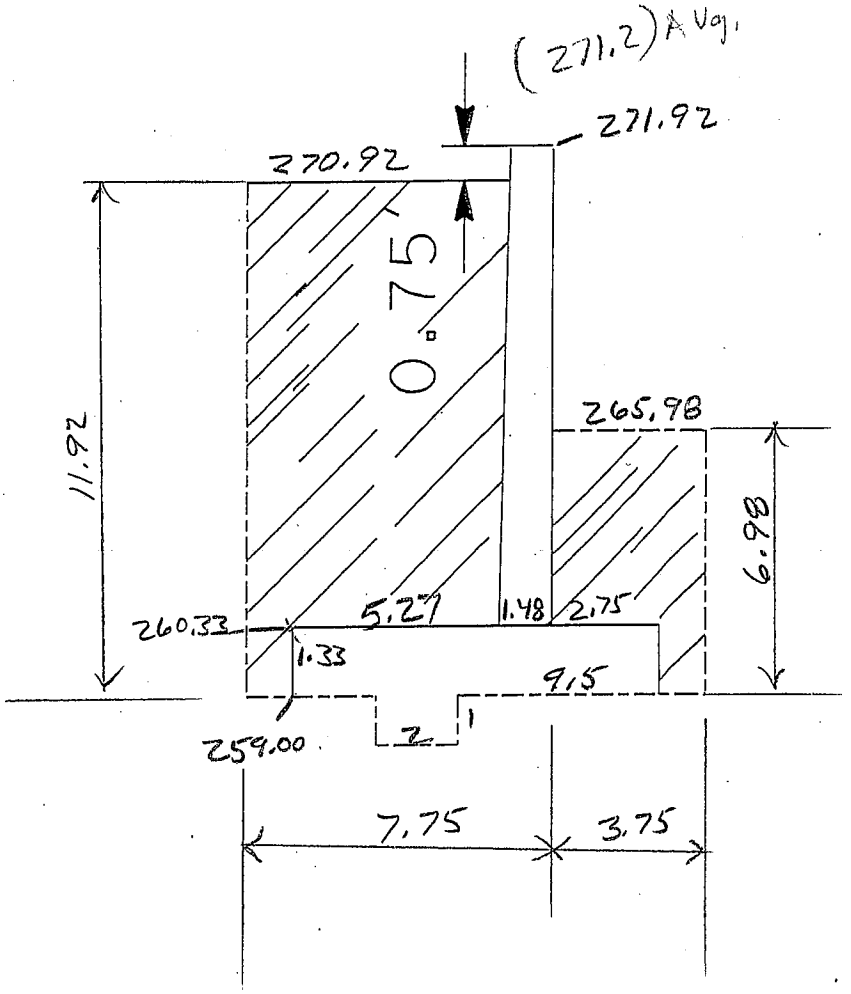


BACKFILL

EXCAVATION

(16) STA 15+00 — 15+40 H=12 L=40

RW LOL #1



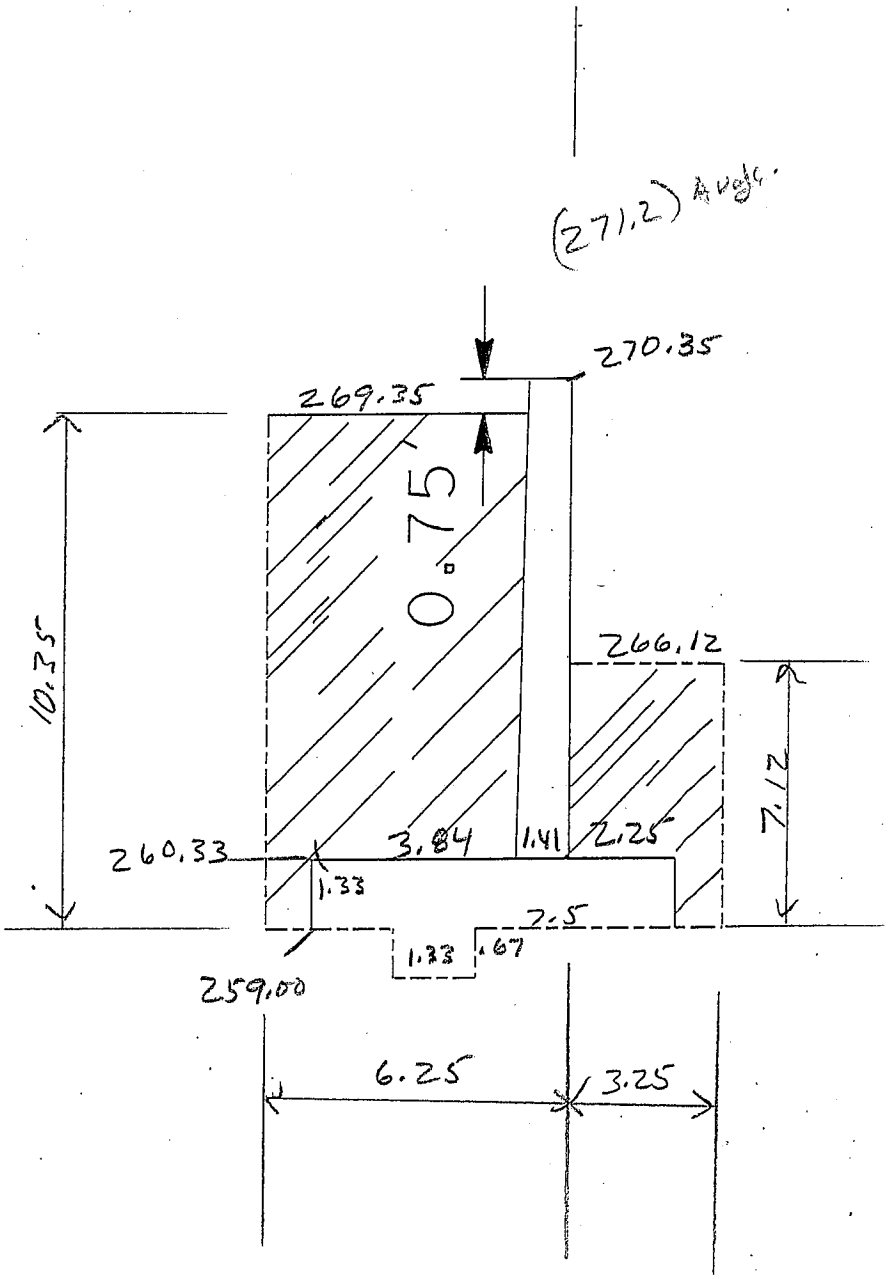
BACKFILL

EXCAVATION

(17) STA STA 15+40 – 15+75.84 H=10 L=35.84'

END RW #1

RW LOL



CHECKER

06-2HT201 QUANTITY GRG 5/2012

Metal Picket	Railing		
Location	Begin Station	End Station	Total Length Ft.
RW # 1	1118	1675	557
RW # 3	1117.46	1263.83	146.37
RW # 5	1332.96	1430.21	97.25
		Total Length	800.62

Fresno Street Retaining Wall # 1,3,5

Minor Concrete Gutter

Location			(Lineal Feet)
Retaining Wall # 3			146.4
Retaining Wall # 5			97.25
	Minor Concrete Gutter:		244

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0 SHEET 1 OF 1

JOB STAMP

ITEM: Concrete Quantity

LOCATION: RW # 3 & # 5

CALC BY: GRG

CHK BY:

FILE NO:

SEGREGATION YES NO

DATE: 5/2012

DATE:

Pedestal Concrete

$= \left[2\left(\frac{1}{2}\right)(1.91)(1.91) + 2(1.91)\right] 5' = 37.34 \text{ (2 Post)} = 74.68 \text{ ft}^3$

$= 2.76 \text{ cu yd}$

POSTED BY DATE POSTED TO

CEM-4801 (HC-52 REV. 11/92)

STATE OF CALIFORNIA-DEPARTMENT OF TRANSPORTATION

BAR REINFORCING SUMMARY

Estimating Section to Forward to RE Pending File

STRUCTURE	BRIDGE NO.	EA	DISTRICT	COUNTY	ROUTE	CALCULATED BY	CHECKED BY
Retaining Wall 1,3,5	0	0	6	Fresno	99	G. Reyes-Gutierrez	Rachel Washington

BAR SIZE		SUPERSTRUCTURE		SUBSTRUCTURE		RETAINING WALLS			
		ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK	ESTIMATE	CHECK
3									
4						3 702	3 662		
5						39 107	38 810		
6						26 761	26 829		
7						9 925	9 855		
8									
9						8 518	8 505		
10									
11									
14									
18									
	INT DIAPHRAGM								
	RAIL								
99	WALL								
	HINGE								
SUBTOTAL						88 013	87 661		
2% SPLICES						1 760	1 753		
TOTAL						89 773	89 414		

NOTES

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 1 OF 1

		SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1

Retaining Wall # 1 Summary (see segments in below sheets)

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
Total # of Segments =														
Type 1 Retaining Wall Reinforcement Totals				0.0	2686.8	23023.7	11877.5	2398.5	0.0	1347.6	0.0	0.0	0.0	0.0

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.												
	TOTAL LENGTHS	0	2687	23024	11878	2399	0	1348	0	0	0	0
	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE	**0**	**1,795**	**24,014**	**17,840**	**4,903**	**0**	**4,582**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET	**0**	**1,795**	**24,014**	**17,840**	**4,903**	**0**	**4,582**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 2 OF 1

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1

Segment 1 — **STA 12+00-12+40 L=40' H=10'**

ITEM		SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1	"T" bars #4@18"	4	6	39.67		238.0									
2	"S" bars #5@18"	5	6	39.67			238.0								
3	"e" bars #6@10" X 5' for 8'	6	100	15.00				1500.0							
4	"c" bars #6@9"	6	54	12.18				657.7							
4a	short "c" bars #6@9"														
5	#5@12"	5	41	8.85			362.9								
6	#5 tot 4	5	4	39.67			158.7								
7	#5@s=9"	5	54	5.26			284.0								
8	#5@12"	5	8	39.67			317.4								
9	"d" bars #6@s=9"	6	54	5.94				320.8							
10	#5@s=9"	5	54	3.17			171.2								
11	#5@12"	5	6	39.67			238.0								
	Step														
1	#5@16	5	6	7.25			43.5								
2	#5@16	5	6	10.00			60.0								
NOTE: For computing steel in Standard Retaining	TOTAL LENGTHS				0	238	1874	2478	0	0	0	0	0	0	0
Wall from the charts, use 99 for size.	WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE				**0**	**159**	**1,954**	**3,723**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET				**0**	**159**	**1,954**	**3,723**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 3 OF 1

		SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1

Segment 2 — **STA 12+20-12+80 L=40' H=12'**

	ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1	"T" bars #4@18"	4	6	39.67		238.0									
2	"S" bars #5@18"	5	6	39.67			238.0								
3	"e" bars #6@10" X 5' for 8'														
4	"c" bars #6@9"	6	54	13.49				728.5							
4a	short "c" bars #6@9"														
5	#5@12"	5	41	9.95			408.0								
6	#5 tot 4	5	4	39.67			158.7								
7	#5@s=9"	5	54	5.81			313.7								
8	#5@12"	5	10	39.67			396.7								
9	"d" bars #6@s=9"	6	54	6.49				350.5							
10	#5@s=9"	5	54	3.34			180.4								
11	#5@12"	5	6	39.67			238.0								
	STEP														
1	#5@16"	5	8	8.00			64.0								
2	#5@16"	5	7	11.34			79.4								
	TOTAL LENGTHS				0	238	2077	1079	0	0	0	0	0	0	0
	WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE				**0**	**159**	**2,166**	**1,621**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET				**0**	**159**	**2,166**	**1,621**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 4 OF 1

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1

Segment 3 — **STA 12+80-13+20 L=40' H=14'**

	ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1	"T" bars #4@18"	4	7	39.67		277.7									
2	"S" bars #5@18"	5	7	39.67			277.7								
3	"e" bars #6@10" X 5' for 8'														
4	"c" bars #6@7"	6	69	15.72				1084.7							
4a	short "c" bars "														
5	#5@12"	5	41	11.62			476.4								
6	#5 tot 4	5	4	39.67			158.7								
7	#5@s=7"	5	69	6.49			447.8								
8	#5@12"	5	12	39.67			476.0								
9	"d" bars #6@s=7"	6	69	7.80				538.2							
10	#5@s=7"	5	69	3.84			265.0								
11	#5@12"	5	8	39.67			317.4								
	STEP														
1	#5@16	5	6	9.25			55.5								
2	#5@16	5	8	10.68			85.4								

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

	No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
TOTAL LENGTHS	0	278	2560	1623	0	0	0	0	0	0	0
WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE	**0**	**185**	**2,670**	**2,438**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET	**0**	**185**	**2,670**	**2,438**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 5 OF 1

		SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1

Segment 4 — **STA 13+20-13+40 L=20' H=14'**

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1 "T" bars #4@18"	4	8	19.67		157.4									
2 "S" bars #5@18"	5	8	19.68			157.4								
3 "e" bars #6@10" X 5' for 8'														
4 "c" bars #6@7"	6	34	16.74				569.2							
4a short "c" bars "														
5 #5@12"	5	21	12.60			264.6								
6 #5 tot 4	5	4	19.67			78.7								
7 #5@s=7"	5	34	6.45			219.3								
8 #5@12"	5	12	19.67			236.0								
9 "d" bars #6@s=7"	6	34	7.76				263.8							
10 #5@s=7"	5	34	3.84			130.6								
11 #5@12"	5	8	19.67			157.4								
STEP														
1 #5@16"	5	6	9.25			55.5								
2 #5@16"	5	8	8.68			69.4								
NOTE: For computing steel in Standard Retaining — TOTAL LENGTHS				0	157	1369	833	0	0	0	0	0	0	0
Wall from the charts, use 99 for size. — WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound. — TOTAL WT. PER SIZE				**0**	**105**	**1,428**	**1,251**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**105**	**1,428**	**1,251**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 6 OF 1

		SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1
Segment 5							

STA 13+40-13+60 L=20' H=14'

ITEM		SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1	"T" bars #4@18"	4	8	19.67		157.4									
2	"S" bars #5@18"	5	8	19.67			157.4								
3	"e" bars #6@10" X 5' for 8'														
4	"c" bars #6@7"	6	34	16.95				576.3							
4a	short "c" bars"														
5	#5@12"	5	21	12.80			268.8								
6	#5 tot 4	5	4	19.67			78.7								
7	#5@s=7"	5	34	6.44			219.0								
8	#5@12"	5	12	19.67			236.0								
9	"d" bars #6@s=7"	6	34	7.75				263.5							
10	#5@s=7"	5	34	3.84			130.6								
11	#5@12"	5	8	19.67			157.4								

NOTE: For computing steel in Standard Retaining												
Wall from the charts, use 99 for size.	TOTAL LENGTHS	0	157	1248	840	0	0	0	0	0	0	0
Show lb/ft to nearest pound.	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE	**0**	**105**	**1,301**	**1,261**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET	**0**	**105**	**1,301**	**1,261**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 7 OF 1

		SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1

Segment 6 — **STA 13+60-13+80 L=20' H=16'**

ITEM		SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1	"T" bars #4@18"	4	8	19.67		157.4									
2	"S" bars #5@18" #5@12"	5	10	19.67			196.7								
3	"e" bars #6@10" X 5' for 8'														
4	"c" bars #7@6"	7	21	16.61					348.8						
4a	short "c" bars #7@6"	7	21	11.77					247.2						
5	#5@12"	5	21	12.00			252.0								
6	#5 tot 4	5	4	19.67			78.7								
7	#5@s=6"	5	40	7.15			286.0								
8	#5@12"	5	12	19.67			236.0								
9	"d" bars #9@s=6"	9	40	8.46							338.4				
10	#5@s=6"	5	40	4.34			173.6								
11	#5@12"	5	8	19.67			157.4								
	STEP														
1	#5@16"	5	8	10.42			83.4								
2	#5@16"	5	8	12.02			96.2								
NOTE: For computing steel in Standard Retaining	TOTAL LENGTHS				0	157	1560	0	596	0	338	0	0	0	0
Wall from the charts, use 99 for size.	WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE				**0**	**105**	**1,627**	**0**	**1,218**	**0**	**1,151**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET				**0**	**105**	**1,627**	**0**	**1,218**	**0**	**1,151**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 8 OF 1

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1

Segment 7 — **STA 13+80-14+40 L=60' H=16'**

ITEM		SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
					No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1	"T" bars #4@18"	4	8	59.67		477.4									
2	"S" bars #5@18" #5@12"	5	10	59.67			596.7								
3	"e" bars #6@10" X 5' for 8'														
4	"c" bars #7@6"	7	61	17.73					1081.5						
4a	short "c" bars #7@6"	7	61	11.82					721.0						
5	#5@12"	5	61	13.07			797.3								
6	#5 tot 4	5	4	59.67			238.7								
7	#5@s=6"	5	120	7.10			852.0								
8	#5@12"	5	12	59.67			716.0								
9	"d" bars #9@s=6"	9	120	8.41							1009.2				
10	#5@s=6"	5	120	4.34			520.8								
11	#5@12"	5	8	59.67			477.4								
	STEP														
1	#5@16"	5	6	10.42			62.5								
2	#5@16"	5	8	8.68			69.4								
NOTE: For computing steel in Standard Retaining	TOTAL LENGTHS				0	477	4331	0	1803	0	1009	0	0	0	0
Wall from the charts, use 99 for size.	WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE				**0**	**319**	**4,517**	**0**	**3,684**	**0**	**3,431**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET				**0**	**319**	**4,517**	**0**	**3,684**	**0**	**3,431**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 9 OF 1

		SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1

Segment 8 — **STA 14+40-15+00 L=60' H=14'**

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1 "T" bars #4@18"	4	7	59.67		417.7									
2 "S" bars #5@18"	5	7	59.67			417.7								
3 "e" bars #6@10" X 5' for 8'														
4 "c" bars #6@7"	6	103	15.43				1589.3							
4a short "c" bars #6@7"														
5 #5@12"	5	61	11.34			691.7								
6 #5 tot 4	5	4	59.67			238.7								
7 #5@s=7"	5	103	6.50			669.5								
8 #5@12"	5	12	59.67			716.0								
9 "d" bars #6@s=7"	6	103	7.81				804.4							
10 #5@s=7"	5	103	3.84			395.5								
11 #5@12"	5	8	59.67			477.4								
STEP														
1 #5@16"	5	8	9.25			74.0								
2 #5@16"	5	7	11.34			79.4								
TOTAL LENGTHS				0	418	3760	2394	0	0	0	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**279**	**3,922**	**3,595**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**279**	**3,922**	**3,595**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 10 OF 1

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1
Segment 9	**STA 15+00-15+40 L=40' H=14'**						

ITEM		SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
					No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1	"T" bars #4@18"	4	8	39.67		317.4									
2	"S" bars #5@18"	5	8	39.67			317.4								
3	"e" bars #6@10" X 5' for 8'														
4	"c" bars #6@7"	6	69	16.11				1111.6							
4a	short "c" bars														
5	#5@12"	5	41	12.00			492.0								
6	#5 tot 4	5	4	39.67			158.7								
7	#5@s=7"	5	69	6.48			447.1								
8	#5@12"	5	12	39.67			476.0								
9	"d" bars #6@s=7"	6	69	7.79				537.5							
10	#5@s=7"	5	69	3.84			265.0								
11	#5@12"	5	8	39.67			317.4								

NOTE: For computing steel in Standard Retaining												
Wall from the charts, use 99 for size.	TOTAL LENGTHS	0	317	2474	1649	0	0	0	0	0	0	0
Show lb/ft to nearest pound.	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE	**0**	**212**	**2,580**	**2,477**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET	**0**	**212**	**2,580**	**2,477**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER** / **DATE**	
Rachel Washington	5/30/2012			916-227-0721 / 5/30/2012	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 11 OF 1

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 1	GRG	6	3591	6	0	0	0612000239-1

Segment 10 — **STA 15+40-15+75.84 L=35.84' H=12'**

ITEM		SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
					No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1	"T" bars #4@18"	4	7	35.51		248.6									
2	"S" bars #5@18"	5	7	35.51			248.6								
3	"e" bars #6@10" X 5' for 8'														
4	"c" bars #6@9"	6	48	13.98				671.0							
4a	short "c" bars #6@9"														
5	#5@12"	5	36	10.43			375.5								
6	#5 tot 4	5	4	35.51			142.1								
7	#5@s=9"	5	48	5.79			277.9								
8	#5@12"	5	10	35.51			355.1								
9	"d" bars #6@s=9"	6	48	6.47				310.6							
10	#5@s=9"	5	48	3.34			160.3								
11	#5@12"	5	6	35.51			213.1								

NOTE: For computing steel in Standard Retaining												
Wall from the charts, use 99 for size.	TOTAL LENGTHS	0	249	1773	982	0	0	0	0	0	0	0
Show lb/ft to nearest pound.	WT. PER FOOT	0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE	**0**	**166**	**1,849**	**1,474**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET	**0**	**166**	**1,849**	**1,474**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW**

		SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 3	GRG	6	3591	6	0	0	0612000239-1

Retaining Wall # 3 Summary (see segments in below sheets)

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
Total # of Segments =														
Type 1 Retaining Wall Reinforcement Totals				0.0	1376.5	7060.4	4463.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NOTE: For computing steel in Standard Retaining	TOTAL LENGTHS			0	1377	7060	4463	0	0	0	0	0	0	0
Wall from the charts, use 99 for size.	WT. PER FOOT			0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE			**0**	**920**	**7,364**	**6,704**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET			**0**	**920**	**7,364**	**6,704**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) RW

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 3	GRG	6	3591	6	0	0	0612000239-1

Segment 1 — **STA 11+20-11+60 L=40' H=8'**

	ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1	"T" bars #4@18"	4	6	39.67		238.0									
2	"S" bars #5@18"	5	6	39.67			238.0								
3	"e" bars #6@10" X 5' for 8'	6	40	15.00				600.0							
4	"c" bars #6@9"	6	54	12.19				658.3							
4a	short "c" bars #6@9"														
5	#5@12"	5	41	8.94			366.5								
6	#5 tot 4	5	4	39.67			158.7								
7	#5@s=9"	5	54	5.00			270.0								
8	#5@12"	5	8	39.67			317.4								
9	"d" bars #6@s=9"	6	54	5.69				307.3							
10	#5@s=9"	5	54	3.00			162.0								
11	#5@12"	5	6	39.67			238.0								
	STEP														
1	#5@16"	5	6	6.92			41.5								
2	#5@16"	5	6	11.00			66.0								
	TOTAL LENGTHS				0	238	1858	1566	0	0	0	0	0	0	0
	WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE				**0**	**159**	**1,938**	**2,351**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET				**0**	**159**	**1,938**	**2,351**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW**

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 3	GRG	6	3591	6	0	0	0612000239-1

Segment 2 — **STA 11+60-12+55 L=95' H=10'**

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1 "T" bars #4@18"	4	7	94.67		662.7									
2 "S" bars #5@18"	5	7	94.67			662.7								
3 "e" bars #6@10" X 5' for 8'														
4 "c" bars #6@9"	6	127	14.73				1870.7							
4a short "c" bars #6@9"														
5 #5@12"	5	96	11.30			1084.8								
6 #5 tot 4	5	4	94.67			378.7								
7 #5@s=9"	5	127	5.16			655.3								
8 #5@12"	5	8	94.67			757.4								
9 "d" bars #6@s=9"	6	127	5.84				741.7							
10 #5@s=9"	5	127	3.17			402.6								
11 #5@12"	5	6	94.67			568.0								
STEP														
1 #5@16"	5	6	7.25			43.5								
2 #5@16"	5	6	10.50			63.0								
NOTE: For computing steel in Standard Retaining — TOTAL LENGTHS				0	663	4616	2612	0	0	0	0	0	0	0
Wall from the charts, use 99 for size. — WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound. — TOTAL WT. PER SIZE				**0**	**443**	**4,814**	**3,924**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**443**	**4,814**	**3,924**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW**

		SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 3	GRG	6	3591	6	0	0	0612000239-1

Segment 3 — **STA 12+55-12+63.83 L=40' H=8"**

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1 "T" bars #4@18"	4	9	8.50		76.5									
2 "S" bars #5@18"	5	9	8.50			76.5								
3 "e" bars #6@10" X 5' for 8'														
4 "c" bars #6@9"	6	12	17.46				209.5							
4a short "c" bars #6@9"														
5 #5@12"	5	12	13.67			164.0								
6 #5 tot 4	5	4	8.50			34.0								
7 #5@s=9"	5	12	5.65			67.8								
8 #5@12"	5	10	8.50			85.0								
9 "d" bars #6@s=9"	6	12	6.33				76.0							
10 #5@s=9"	5	12	3.34			40.1								
11 #5@12"	5	3	8.50			25.5								
PEDESTAL														
#4 @ 6"	4	10	13.10		131.0									
#4 @ 6 "	4	10	26.83		268.3									
#5 TOT 20	5	20	4.67			93.4								
NOTE: For computing steel in Standard Retaining	TOTAL LENGTHS			0	476	586	285	0	0	0	0	0	0	0
Wall from the charts, use 99 for size.	WT. PER FOOT			0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE			**0**	**318**	**612**	**429**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET			**0**	**318**	**612**	**429**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 1 OF 1

		SOURCE DIST	SOURCE UNIT	CHARGE DIST	CHARGE UNIT	EXPENDITURE AUTHORIZATION	SPECIAL DES *WHEN APPLICABLE*
Retaining Wall # 5	GRG	6	3591	6	0	0	0612000239-1

Retaining Wall # 5 Summary (see segments in below sheets)

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
Total # of Segments =														
Type 1 Retaining Wall Reinforcement Totals				0.0	1478.3	7410.5	1476.2	2457.3	0.0	1157.6	0.0	0.0	0.0	0.0

NOTE: For computing steel in Standard Retaining	TOTAL LENGTHS			0	1478	7410	1476	2457	0	1158	0	0	0	0
Wall from the charts, use 99 for size.	WT. PER FOOT			0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
Show lb/ft to nearest pound.	TOTAL WT. PER SIZE			**0**	**987**	**7,729**	**2,217**	**5,023**	**0**	**3,936**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET			**0**	**987**	**7,729**	**2,217**	**5,023**	**0**	**3,936**	**0**	**0**	**0**	**0**

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW** PAGE 2 OF 1

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 5	GRG	6	3591	6	0	0	0612000239-1

Segment 1 — **STA 13+32.96-13+60 L=27.04' H=12'**

ITEM		SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
					No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1	"T" bars #4@18"	4	9	26.71		240.4									
2	"S" bars #5@18"	5	9	26.71			240.4								
3	"e" bars #6@10" X 5' for 8'	6	40	15.00				600.0							
4	"c" bars #6@9"	6	37	17.36				642.3							
4a	short "c" bars #6@9"														
5	#5@12"	5	28	13.66			382.5								
6	#5 tot 4	5	4	26.71			106.8								
7	#5@s=9"	5	37	5.14			190.2								
8	#5@12"	5	10	26.71			267.1								
9	"d" bars #6@s=9"	6	37	6.32				233.8							
10	#5@s=9"	5	37	3.34			123.6								
11	#5@12"	5	6	26.71			160.3								
	STEP														
1	#5@16"	5	8	8.00			64.0								
2	#5@16"	5	7	12.44			87.1								
	TOTAL LENGTHS				0	240	1622	1476	0	0	0	0	0	0	0
	WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
	TOTAL WT. PER SIZE				**0**	**161**	**1,692**	**2,217**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
	TOTAL WT. PER SHEET				**0**	**161**	**1,692**	**2,217**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS		NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012		IN CASE OF QUESTION CONTACT:	**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

REINFORCING STEEL

DS-D 0110 (REV 8/91) **RW**

		SOURCE		CHARGE		EXPENDITURE	SPECIAL DES
		DIST	UNIT	DIST	UNIT	AUTHORIZATION	*WHEN APPLICABLE*
Retaining Wall # 5	GRG	6	3591	6	0	0	0612000239-1

Segment 2 — **STA 13+60-14+30.21 L=70.21' H=16'**

ITEM	SIZE	NO.	LENGTH	TOTAL LENGTH - EACH SIZE										
				No 3	No 4	No 5	No 6	No 7	No 8	No 9	No 10	No 11	No 14	No 18
1 "T" bars #4@18"	4	12	69.88		838.6									
2 "S" bars #5@18"	5	14	69.88			978.3								
3 "e" bars #6@10" X 5' for 8'														
4 "c" bars #7@6"	7	71	22.75					1615.3						
4a short "c" bars #7@6"	7	71	11.86					842.1						
5 #5@12"	5	71	17.89			1270.2								
6 #5 tot 4	5	4	69.88			279.5								
7 #5@s=9"	5	141	8.21			1157.6								
8 #5@12"	5	12	69.88			838.6								
9 "d" bars #9@s=6"	9	141	8.21							1157.6				
10 #5@s=9"	5	141	4.34			611.9								
11 #5@12"	5	8	69.88			559.0								
PEDESTAL														
#4 @ 6"	4	10	13.10		131.0									
#4 @ 6"	4	10	26.83		268.3									
#5 TOT 20	5	20	4.67			93.4								
TOTAL LENGTHS				0	1238	5789	0	2457	0	1158	0	0	0	0
WT. PER FOOT				0.376	0.668	1.043	1.502	2.044	2.670	3.400	4.303	5.313	7.650	13.600
TOTAL WT. PER SIZE				**0**	**827**	**6,037**	**0**	**5,023**	**0**	**3,936**	**0**	**0**	**0**	**0**
TOTAL WT. PER SHEET				**0**	**827**	**6,037**	**0**	**5,023**	**0**	**3,936**	**0**	**0**	**0**	**0**

NOTE: For computing steel in Standard Retaining Wall from the charts, use 99 for size. Show lb/ft to nearest pound.

BY	DATE	REMARKS	IN CASE OF QUESTION CONTACT:	NAME	VERIFY
G. Reyes-Gutierrez	5/30/2012			**Richard Melko**	
CHECK	**DATE**			**BUSINESS PHONE NUMBER**	**DATE**
Rachel Washington	5/30/2012			916-227-0721	5/30/2012

DATE 5/2012 SUBJECT RW #1 Rebar Quantity

Section 1

STA 12+00 - 12+40 L=40 H=10 H_{Avg} = 7.93 base = 1.33

① t bars #4@18 $\frac{7.93(12)}{18}+1=6$ L=39.67

② s bars #5@18 Tot=6 L=39.67

③ e bars #6@10" x 15' lap 8'
10 (10 sets) x 15'

④ c bars #6@9 $\frac{40(12)}{9}+1=54$

L= 7.93 - .16 + 1.33 - .25 + 1.33 + 2.33 - .33 = 12.18

⑤ #5@12 Tot=41 L= 7.93 - .16 + 1.33 - .25 = 8.85

⑥ #5 tot 4 L=39.67

⑦ #5 @ s=9" Tot=54 L= 5.25 - 1.33 + 1.5 - .16 = 5.26

⑧ #5 @12 $\left(\frac{5.25-1.33}{12}\right)12+1=4(2)=8$ L=39.67'

⑨ d bars #6 @ s=9" Tot=54 L= 5.25 - 1.33 + 35(.0625) - .16 = 5.94'

⑩ #5@s=9 Tot=54 L= 2.33 + 1 - .16 = 3.14'

⑪ #5 @12 $\frac{2.33(12)}{12}+1=3(2)=6$ L=39.67

Step

① #5@16 $\frac{3.33(12)}{16}+1=3(2)=6$ L= 7.58 - .33 = 7.25

② #5@16 (2) $\frac{7.58(12)}{16}+1=6$ sets L= (3.33 - .33 + 2)2
L= 10' / set.

DATE 5/2012 SUBJECT RW #1 Rebar Quantity

Section 2

STA 12+40 - 12+80   L=40   H=12   Havg = 8.86   base = 1.36

① t bars #4@18 $\frac{8.86(12)}{18}+1=6$ L=39.67

② s bars #5@18   TOT=6   L=39.67

③ e bars #6 @10" x 15' for 8'

④ c bars #6 @9 $\frac{40(12)}{9}+1=54$

L = 8.86 - .16 + 1.5 - .25 + 1.36 + 2.5 - .33 = 13.49'

⑤ #5@12   TOT=41   L = 8.86 - .16 + 1.5 - .25 = 9.95

⑥ #5 tot 4   L=39.67

⑦ #5 @ s=9"   TOT=54   L = 5.83 - 1.36 + 1.5 - .16 = 5.81

⑧ #5@12 $\frac{(5.83-1.36)(12)}{12}+1=5(2)=10$ L=39.67

⑨ d bars #6 @ s=9   tot=54   L = 5.83 - 1.36 + 35(.0625) - .16 = 6.49'

⑩ #5 @ s=9"   tot=54   L = 2.5 + 1 - .16 = 3.34

⑪ #5 @12 $\frac{2.5(12)}{12}+1=3(2)=6$ L=39.67

STEP

① #5 @ 16 $\frac{(4)(12)}{16}+1=4(2)=8$ L = 8.33 - .33 = 8

② #5 @16 $\frac{8.33(12)}{16}+1=7$ sets.

L = (4 - .33 + 1) 2 = (5.67)(2) = 11.34' / set

DATE 5/2012 SUBJECT RW#1 Rebar Quantity
DS-D 13 (REV 3/83)

Section 3

STA 12+80 - 13+20   L=40   H=14 H_{Avg} = 10.37   base = 1.43

① t bars #4@18 $\frac{(10.37)(12)}{18}+1 = 7$ L = 39.67

② S bars #5@18   Tot = 7   L = 39.67

③ e bars #6 @10" t/5' for 8'

④ d bars #6@7" $\frac{40(12)}{7}+1 = 69$

L = 10.37 - .16 - 1.66 - .25 + 1.43 + 3 - .33 = 15.72

⑤ #5@12   TOT = 41   L = 10.37 - .16 + 1.66 - .25 = 11.62

⑥ #5 TOT 4   L = 39.67

⑦ #5 @s=7"   TOT = 69   L = 6.58 - 1.43 + 1.5 - .16 = 6.49

⑧ #5@12 $\frac{(6.58-1.43)(12)}{12}+1 = 6(2) = 12$ L = 39.67

⑨ d bars #6 @s=7"   TOT = 69   L = 6.58 - 1.43 + 45(.0625) - .16
L = 7.8

⑩ #5 @s=7"   TOT = 69   L = 3 + 1 - .16 = 3.84

⑪ #5@12 $\frac{3(12)}{12}+1 = 4(2) = 8$ L = 39.67

STEP

① #5@16 $\frac{(3.67)(12)}{16}+1 = 3(2) = 6$ L = 9.58 - .33 = 9.25

② #5@16 (2) $\frac{9.58(12)}{16}+1 = 8$ sets

L = (3.67 - .33 + 2) 2 = 10.68' / set.

Section 4

STA 13+20 - 13+40 L=20 H = 14' H Avg = 11.35 base = 1.47

① t bars #4 @18 $\frac{11.35(12)}{18} + 1 = 8$ L = 19.67'

② s bars #5 @18 Tot = 8 L = 19.67

③ e bars #6 @10" x 5' for 8'

④ c bars #6 @7" $\frac{19.67(12)}{7} + 1 = 34$

L = 11.35 - .16 + 1.66 - .25 + 1.47 + 3 - .33 = 16.74

⑤ #5 @12 | Tot = 21 L = 11.35 - .16 + 1.66 - .25 = 12.6

⑥ #5 Tot 4 L = 19.67

⑦ #5 @ s=7" Tot = 34 L = 6.58 - 1.47 + 1.5 - .16 = 6.45

⑧ #5 @12 $\frac{(6.58 - 1.47)(12)}{12} + 1 = 6(2) = 12$ L = 19.67

⑨ d bars #6 @7 tot = 34 L = 6.58 - 1.47 + 45(.0625) - .16
L = 7.76

⑩ #5 @s=7 Tot = 34 L = 3 + 1 - .16 = 3.84

⑪ #5 @12 $\frac{3(12)}{12} + 1 = 4(2) = 8$ L = 19.67

STEP.

① #5 @16 $\frac{(2.67)(12)}{16} + 1 = 3(2) = 6$ L = 9.58 - .33 = 9.25

② #5 @16 | 2 $\frac{9.58(12)}{16} + 1 = 8$ sets L = (2.67 - .33 + 2)2 = 8.68' / set.

DATE 5/2017 SUBJECT RW#1 Rebar Quantity

Section 5

STA 13+40 – 13+60 L=20 H=14 HAvg = 11.55 base = 1.48

① t bar #4 @ 18 $\frac{(11.55)(12)}{18} + 1 = 8$ L = 19.67

② s bar #5 @ 18 Tot = 8 L = 19.67

③ e bar #6 @ 10" x 15' Lap 3'

④ c bar # 6 @ 7" TOT = 34

L = 11.55 - .16 + 1.66 - .25 + 1.48 + 3 - .33 = 16.95

⑤ #5 @ 12 / Tot = 21 L = 11.55 - .16 + 1.66 - .25 = 12.8

⑥ #5 tot 4 L = 19.67

⑦ #5 @ s = 7" Tot = 34 L = 6.58 - 1.48 + 1.5 - .16 = 6.44

⑧ #5 @ 12 $\frac{(6.58 - 1.48)12}{12} + 1 = 6(2) = 12$ L = 19.67

⑨ d bars #6 @ s = 7" TOT = 34 L = 6.58 - 1.48 + 45(.0625) - .16

L = 7.75

⑩ #5 @ s = 7" tot = 34 L = 3 + 1 - .16 = 3.84

⑪ #5 @ 12 $\frac{3(12)}{12} + 1 = 4(2) = 8$ L = 19.67

BY CRG JOB 06-2HT201 6 10

DATE 6/2012 SUBJECT RW #1 Rebar Quantity

DSH-18 (REV. 3/03)

Section 6

STA 13+60 — 13+80 L = 20 H = 16 H Avg = 10.75

base = 1.44

① ebars #4@18 $\frac{10.75(12)}{18}+1=8$ L = 19.67

② sbars #5@18 $\frac{5.37(12)}{18}+1=4$ > 10 L = 19.67

#5@12 $\frac{5.37(12)}{12}+1=6$

③ ebars #6@10" x 15' for 8'

④ ebars #7@6" $\frac{20(12)}{12}+1=21$

L = 10.75 - .16 + 1.66 - .25 + 1.44 + 3.5 - .33 = 16.61

④a short ebars #7@6" Tot = 21

L = 5.75 + 1.66 - .25 + 1.44 + 3.5 - .33 = 11.77

⑤ #5@12 | Tot = 21 L = 10.75 - .16 + 1.66 - .25 = 12'

⑥ #5 tot 4 L = 19.67

⑦ #5 @ s = 6" $\frac{19.67(12)}{6}+1=40$ L = 7.25 - 1.44 + 1.5 - .16 = 7.15

⑧ #5@12 $\frac{(7.25-1.44)(12)}{12}+1=6(2)=12$ L = 19.67

⑨ d bars #9 @6" Tot = 40 L = 7.25 - 1.44 + 45(.0625) - .16 = 8.46

⑩ #5@s=6" Tot = 40 L = 3.5 + 1.0 - .16 = 4.34

⑪ #5@12 $\frac{3.5(12)}{12}+1=4(2)=8$ L = 19.67

STEP

①#5@16 $\frac{4.34(12)}{16}+1=4(2)=8$ L = 10.75 - .33 = 10.42

⑫ #5@16 | 2 $\frac{10.42(12)}{16}+1=8$ sets L = (4.34 - .33 + 2) 2 = 12.02' / set

OSP 07 10/5/42

Section 7

STA 13+80 – 14+40 L = 60 H = 16 H_{Avg} = 11.82 base = 1.49

(1) t bars #4 @ 18 $\frac{11.82(12)}{18} + 1 = 8$ L = 59.67

(2) s bars #5 @ 18 $\frac{(5.91)(12)}{18} + 1 = 4$
#5 @ 12 $\frac{(5.91)(12)}{12} + 1 = 6$ } 10 L = 59.67

(3) e bars #6 @ 10" x 15' for 8'

(4) c bars #7 @ 6" $\frac{60(12)}{12} + 1 = 61$

L = 11.82 – .16 + 1.66 – .25 + 1.49 + 3.5 – .33 = 17.73

(4a) short c bars #7 @ 6" Tot = 61 L = 5.75 + 1.66 – .25 + 1.49 + 3.5 – .33
L = 11.82

(5) #5 @ 12 | Tot = 61 L = 11.82 – .16 + 1.66 – .25 = 13.07'

(6) #5 tot 4 L = 59.67'

(7) #5 @ s = 6" $\frac{(59.67)(12)}{6} + 1 = 120$ L = 7.25 – 1.49 + 1.5 – .16 = 7.1

(8) #5 @ 12 $\frac{(7.25 - 1.49)12}{12} + 1 = 6(2) = 12$ L = 59.67

(9) d bars #9 @ 6" $\frac{(59.67)(12)}{6} + 1 = 120$

L = 7.25 – 1.49 + 45(.0625) – .16 = 8.41

(10) #5 @ s = 6" Tot = 120 L = 3.5 + 1 – .16 = 4.34

(11) #5 @ 12 $\frac{(3.5)(12)}{12} + 1 = 4(2) = 8$ L = 59.67

Step

#5 @ 16 $\frac{(2.67)(12)}{16} + 1 = 3(2) = 6$ L = 10.75 – .33 = 10.42

#5 @ 16 2 $\frac{(10.42)(12)}{16} + 1 = 8$ sets L = (2.67 + 2 – .33) 2 = 8.68' / Set.

Section 8
STA 14+40 – 15+00 L=60 H=14 H_{AVG}=10.09 base=1.42

① t bars #4@18 $\frac{10.09(12)}{18}+1=7$ L=59.67

② s bars #5@18 Tot=7 L=59.67

③ e bars #6@10" X 15' for 8'

④ c bars #6@7" $\frac{(59.67)(12)}{7}+1=103$

L=10.09-.16+1.66-.25+1.42+3-.33=15.43

⑤ #5@12 | Tot=61 L=10.09-.16+1.66-.25=11.34

⑥ #5 Tot 4 L=59.67

⑦ #5@s=7" Tot=103 L=6.58-1.42+1.5-.16=6.5

⑧ #5@12 $\frac{(6.58-1.42)}{12}12+1=6(2)=12$ L=59.67

⑨ d bars #6@7 Tot=103 L=6.58-1.42+45(.0625)-.16
L=7.81

⑩ #5@s=7" Tot=103 L=3+1-.16=3.84

⑪ #5@12 $\frac{3(12)}{12}+1=4(2)=8$ L=59.67

STEP
① #5@16 $\frac{4(12)}{16}+1=4(2)=8$ L=9.58-.33=9.25

② #5@16 | 2 $\frac{9.25(12)}{16}+1=$ 7 sets.

L=(4-.33+2)2 = 11.34' / set

Section 9

STA 15+00 – 15+40 L=40 H=14 H_{AVG} = 10.75 L_{bend} = 1.44

① t bars #4 @18 $\frac{10.75(12)}{18}+1=8$ L=39.67'

② sbar #5 @18 Tot=8 L=39.67

③ ebars #6 @ 10" x 15" for 8'

④ ebars #6 @7" $\frac{39.67(12)}{7}+1=69$

L= 10.75 -.16+1.66-.25+1.44+3-.33 = 16.11

⑤ #5 @12 | Tot = 71 L=10.75-.16+1.66-.25=12

⑥ #5 Tot 4 L=39.67

⑦ #5 @s=7" Tot=69 L=6.58-1.44+1.5-.16=6.48

⑧ #5 @12 $\frac{(6.58-1.44)(12)}{12}+1=6(2)=12$ L=39.67'

⑨ d bars #6 @7" Tot=69 L=6.58-1.44+45(.0625)-.16=7.79

⑩ #5 @s=7" Tot=69 L=3+1-.16=3.84

⑪ #5 @12 $\frac{3(12)}{12}+1=4(2)=8$ L=39.67

Section 10

STA 15+40 — 15+75.84 L=35.84 H=12 H_{AVG} = 9.34 base = 1.38

① t bars #4 @18 $\frac{9.34(12)}{18} + 1 = 7$ L = 35.51

② s bars #5 @18 Tot = 7 L = 35.51

③ e bars #6 @10" x 15' for 8'

④ d bars #6 @9 $\frac{35.84(12)}{9} + 1 = 48$

L = 9.34 − .16 + 1.5 − .25 + 1.38 + 2.5 − .33 = 13.98

⑤ #5 @12 | Tot = 36 L = 9.34 − .16 + 1.5 − .25 = 10.43

⑥ #5 tot 4 L = 35.51

⑦ #5 @ S = 9" Tot = 48 L = 5.83 − 1.38 + 1.5 − .16 = 5.79

⑧ #5 @12 $\frac{(5.83 - 1.38)(12)}{12} + 1 = 5(2) = 10$ L = 35.51

⑨ d bars #6 @9 Tot = 48 L = 5.83 − 1.38 + 35(.0625) − .16
L = 6.47

⑩ #5 @ S = 9" Tot = 48 L = 2.5 + 1 − .16 = 3.34

⑪ #5 @12 $\frac{2.5(12)}{12} + 1 = 3(2) = 6$ L = 35.51

FROM GRG JOB EA-06-2HT201

DATE 5/2012 SUBJECT RW #3 Rebar Quantity

US-D 18 (REV. 5/83)

Section 1 Sta 11+20 - 11+60 L = 40 H = 8

① t bar #4 @ 18" $\frac{(8.02)(12)}{18} + 1 = 6$ L = 39.67

② s bar #5 @ 18" Tot = 6 L = 39.67

③ e bar #6 @ 10" x 15' for 8'
(4 sets)(10) x 15'

④ c bars #6 @ 9" $\frac{40(12)}{9} + 1 = 54$

L = 8.02 - .16 + 1.33 - .25 + 1.33 + 2.25 - .33 = 12.19'

⑤ #5 @ 12 | Tot = 41 L = 8.02 - .16 + 1.33 - .25 = 8.94'

⑥ #5 Tot 4 L = 39.67

⑦ #5 @ s=9" Tot = 54 L = 5 - 1.33 + 1.5 - .16 = 5.0'

⑧ #5 @ 12 $\frac{(5 - 1.33)(12)}{12} + 1 = 4(2) = 8$ L = 39.67

⑨ a bar #6 @ 9" Tot = 54 L = 5 - 1.33 + 35(.0625) - .16 = 5.69'

⑩ #5 @ s=9" Tot = 54 L = 2.25 + 1. - .16 = 3.0'

⑪ #5 @ 12 $\frac{(2.25)(12)}{12} + 1 = 3(2) = 6$ L = 39.67'

STEP

① #5 @ 16 $\frac{(3.83)(12)}{16} + 1 = 3(2) = 6$ L = 7.25 - .33 = 6.92

② #5 @ 16 | 2' $\frac{7.25(12)}{16} + 1 = 6$ sets.

L = (3.03 + 2 - .33) = 5.5(2) = 11' / Set

OSF 07 104942

Section 2 STA 11+60 - 12+55 L=95' #=10'

① t bars #4@18" $\frac{(10.38)(12)}{18}+1=7$ L=94.67

② s bars #5@18" TOT=7 L=94.67

③ e bars #6@10" x 15' for 8'

④ c bars #6@9" $\frac{95(12)}{9}+1=127$

L=10.38-.16+1.33-.25+1.43+2.33-.33=14.73

⑤ #5@12 | TOT=96 L=10.38+1.33-.25-.16=11.3

⑥ #5 TOT 4 L=94.67

⑦ #5@s=9" TOT=127 L=5.25-1.43+1.5-.16=5.16'

⑧ #5@12 $\frac{(5.25-1.43)12}{12}+1=4(2)=8$ L=94.67

⑨ d bars #6@9 TOT=127 L=5.25-1.43+35(.0625)-.16
L=5.84

⑩ #5@s=9" TOT=127 L=2.33-.16+1=3.17'

⑪ #5@12 $\frac{2.33(12)}{12}+1=3(2)=6$ L=94.67

STEP

① #5@16 $\frac{3.58(12)}{16}+1=3(2)=6$ L=7.58-.33
L=7.25'

② #5@16 $\frac{7.58(12)}{16}+1=\frac{6}{\text{Sets}}$

L=3.58-.33+2=5.25'(2)=10.5

DATE 5/2012 SUBJECT RW #3 Rebar Quantity

Section 3 STA 12+55 – 12+63.83 L = 8.83 H = 8'

① t bars #4 @ 18 $\frac{12.58(12)}{18} + 1 = 9$ L = 8.5'

② s bars #5 @ 18 Tot = 9 L = 8.5'

③ e bar #6 @ 10" x 15' for 8'
shown in section "1"

④ c bars #6 @ 9" $\frac{(8.5)(12)}{9} + 1 = 12$

L = 12.58 - .16 + 1.5 - .25 + 1.52 + 2.6 - .33 = 17.46'

⑤ #5 @ 12 | Tot = 12 L = 12.58 - .16 + 1.5 - .25 = 13.67'

⑥ #5 Tot 4 L = 8.5'

⑦ #5 @ s = 9" Tot = 12 L = 5.83 - 1.52 + 1.5 - .16 = 5.65'

⑧ #5 @ 12 $\frac{(5.83 - 1.52)(12)}{12} + 1 = 5(2) = 10$ L = 8.5'

⑨ d bars #6 @ s = 9" Tot = 12 L = 5.83 - 1.52 + 35(.0625) - .16
L = 6.33'

⑩ #5 @ s = 9" Tot = 12 L = 2.5 + 1 - .16 = 3.34'

⑪ #5 @ 12 $\frac{2.5(12)}{12} + 1 = 3$ L = 8.5'

BY GRG 06-2HT201 1 2

DATE 5/2012 SUBJECT RW #5 Rebar Quantity

DS-D 18 (REV 3/93)

Section 1 Sta 13+32.96 – 13+60 L = 27.04' H = 12'

① t bar #4 @ 18" $\frac{12.57(12)}{18} + 1 = 9$ L = 26.71'

② s bar #5 @ 18 TOT = 9 L = 26.71

③ e bar #6 @ 10" x 15' La 8'
(4 sets)(10) 15'

④ C bars #6 @ 9 $\frac{27.04(12)}{9} + 1 = 37$

L = 12.57 – .16 + 1.5 – .25 + 1.53 + 2.5 – .33 = 17.36'

⑤ #5 @ 12 | TOT = 28 L = 12.57 – .16 + 1.5 – .25 = 13.66'

⑥ #5 tot 4 L = 26.71
⑦ #5 @ s = 9" TOT = 37 L = 5.83 – 1.53 + 1. – .16 = 5.14

⑧ #5 @ 12 $\frac{(5.83 - 1.53)(12)}{12} + 1 = 5(2) = 10$ L = 26.71

⑨ d bars #6 @ s = 9" TOT = 37 L = 5.83 – 1.53 + 35(.0625) – .16 = 6.32

⑩ #5 @ s = 9" Tot = 37 L = 2.5 + 1 – .16 = 3.34'

⑪ #5 @ 12 $\frac{2.5(12)}{12} + 1 = 3(2) = 6$ L = 26.71

STEP

① #5 @ 16 $\frac{4.55(12)}{16} + 1 = 4(2) = 8$ L = 8.33 – .33 = 8'

② #5 @ 16 (2') $\frac{8.33(12)}{16} + 1 = 7$ sets

L = 4.55 – .33 + 2 = 6.22 (2) = 12.44

OSP 07 104942

BY GPC 06-2HT201 2 2

DATE 5/2012 SUBJECT RW #5 Rebar Quantity

Section 2 Sta 13+60 - 14+30.21 L = 70.21 H = 16'

① t bars #4 @ 18 $\frac{16.64(12)}{18} + 1 = 12$ L = 69.88'

② s bars #5 @ 18 $\frac{8.32(12)}{18} + 1 = 6$ $\frac{8.32(12)}{12} = 8$ Tot = 14
L = 69.88

③ e bars #6 @ 10" x 5' for 8'
Shown in section 1

④ e bars #7 @ 6" $\frac{(70.21)(12)}{2(6)} + 1 = 71$
L = 16.64 - .16 + 1.66 - .25 + 1.69 + 3.5 - .33 = 22.75

④a short e bars #7 @ 6" Tot = 71
L = 5.25 - .16 + 1.66 - .25 + 1.69 + 3.5 - .33 = 11.86'

⑤ #5 @ 12 Tot = 71 L = 16.64 - .16 + 1.66 - .25 = 17.89'

⑥ t 5 tot 4 L = 69.88

⑦ #5 @ s = 6" $\frac{(70.21)(12)}{6} + 1 = 141$ L = 7.25 - 1.69 + 1.5 - .16 = 6.9

⑧ #5 @ 12 $\frac{(7.25 - 1.69)12}{12} + 1 = 6(2) = 12$ L = 69.88

⑨ d bars #9 @ s = 6" Tot = 141
L = 7.25 - 1.69 + .45 (.0625) - .16 = 8.21

⑩ #5 @ s = 6" Tot 141 L = 3.5 + 1.0 - .16 = 4.34

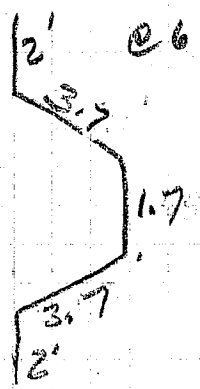
⑪ #5 @ 12" $\frac{3.5(12)}{12} + 1 = 4(2) = 8$ L = 69.88

CSP 07 10472

Rebar Quantity Street Light Pedestal
RW # 3 & #5
GRG 5/2012

RW #

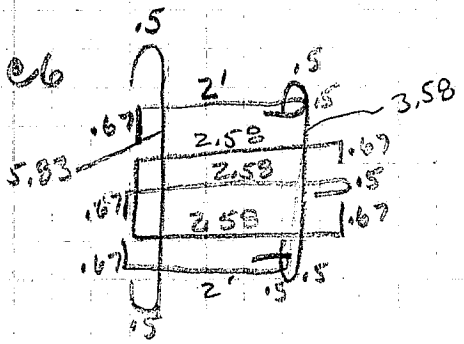
#4 2' @ 6"



L = 13.1'

$\frac{(5-.33)(12)}{6} + 1 = 10$ (2 pedestals) = 20

#4 @ 6



∴ Total = 10(2 pedestals) = 20

L = 6.83 L = 4.58 L = 3.17 L = 8.5 L = 3.75

L total = 26.83

#5 tot 20 20(2) = 40 L = 5 - .33 = 4.67

Concrete Quantities
Fresno St. Retaining Walls
06-2HT201

Rich Melko
5/16/2012

Summary

Wall	Footing Volume ft³	Footing Volume CYD	Stem Volume ft³	Stem Volume CYD	Total Volume ft³	Total Volume CYD
1	6,501.7	240.8	4,973.4	184.2	11,475.1	425.0
2	6,484.8	240.2	4,739.7	175.5	11,224.6	415.7
3	1,654.9	61.3	1,735.7	64.3	3,390.6	125.6
4	1,602.4	59.3	1,701.1	63.0	3,303.5	122.4
5	1,819.9	67.4	2,007.8	74.4	3,827.7	141.8
6	2,038.1	75.5	2,327.4	86.2	4,365.5	161.7
1,3,5	9,976.5	369.5	8,717.0	322.9	18,693.5	692.4
2,4,6	10,125.3	375.0	8,768.3	324.8	18,893.6	699.8

Retaining Wall 1

General Information											Footing Volume						Stem Volume					Total Volume	
Station 1 ft	Station 2 ft	Section	Design H ft	Bottom Ftg Elev ft	Top of Wall 1 ft	Top of Wall 2 ft	W ft	F ft	Key ft²	Section Length ft	Step at Begin?	Step Volume ft³	Key Length ft	Key Volume ft³	Footing Volume ft³	Total Footing Volume ft³	Average Real H ft	Top Thick in	Bottom Thick in	Stem Area ft²	Stem Volume ft³	ft³	CYD
1200	1240	1	10	272.50	282.96	282.06	7.58	1.33	0.89	40.00		0.00	39.00	34.67	403.43	438.10	8.68	12	16.34	10.25	409.99	848.09	31.41
1240	1280	2	12	270.50	282.06	281.16	8.33	1.50	2.00	40.00	x	15.17	40.00	80.00	499.80	594.97	9.61	12	16.81	11.53	461.36	1056.33	39.12
1280	1320	3	14	268.00	281.16	279.92	9.58	1.67	2.00	40.00	x	20.83	40.00	80.00	640.17	740.99	10.87	12	17.44	13.33	533.26	1274.26	47.19
1320	1340	4	14	266.00	279.92	279.12	9.58	1.67	2.00	20.00	x	19.17	20.00	40.00	320.08	379.25	11.85	12	17.93	14.78	295.51	674.76	24.99
1340	1360	5	14	265.00	279.12	278.32	9.58	1.67	2.00	20.00	x	9.58	21.00	42.00	320.08	371.67	12.05	12	18.03	15.08	301.50	673.17	24.93
1360	1380	6	16	265.00	278.32	277.52	10.75	1.67	2.00	20.00		0.00	19.00	38.00	359.05	397.05	11.25	12	17.63	13.89	277.73	674.78	24.99
1380	1440	7	16	262.33	277.52	275.12	10.75	1.67	2.00	60.00	x	28.70	60.00	120.00	1077.15	1225.85	12.32	12	18.16	15.48	928.93	2154.78	79.81
1440	1500	8	14	261.66	275.12	272.72	9.58	1.67	2.00	60.00	x	6.42	60.00	120.00	960.25	1086.67	10.59	12	17.30	12.93	775.59	1862.26	68.97
1500	1540	9	14	259.00	272.72	271.12	9.58	1.67	2.00	40.00	x	25.49	41.00	82.00	640.17	747.66	11.25	12	17.63	13.89	555.47	1303.13	48.26
1540	1575.84	10	12	259.00	271.12	269.92	8.33	1.50	2.00	35.84		0.00	35.84	71.68	447.82	519.50	10.02	12	17.01	12.11	434.08	953.58	35.32
																6,501.7					4,973.4	11,475.1	425.0

Retaining Wall 2

General Information											Footing Volume						Stem Volume					Total Volume	
Station 1 ft	Station 2 ft	Section	Design H ft	Bottom Ftg Elev ft	Top of Wall 1 ft	Top of Wall 2 ft	W ft	F ft	Key ft²	Section Length ft	Step at Begin?	Step Volume ft³	Key Length ft	Key Volume ft³	Footing Volume ft³	Total Footing Volume ft³	Average Real H ft	Top Thick in	Bottom Thick in	Stem Area ft²	Stem Volume ft³	ft³	CYD
1199.38	1240	1	10	272.50	282.55	281.51	7.58	1.33	0.89	40.62		0.00	39.62	35.22	409.69	444.90	8.20	12	16.10	9.60	389.99	834.89	30.92
1240	1280	2	12	270.50	281.51	280.48	8.33	1.50	2.00	40.00	x	15.17	40.00	80.00	499.80	594.97	9.00	12	16.50	10.68	427.23	1022.19	37.86
1280	1320	3	14	268.00	280.48	279.46	9.58	1.67	2.00	40.00	x	20.83	40.00	80.00	640.17	740.99	10.30	12	17.15	12.51	500.41	1241.40	45.98
1320	1340	4	14	266.50	279.46	278.91	9.58	1.67	2.00	20.00	x	14.38	20.00	40.00	320.08	374.46	11.02	12	17.51	13.54	270.85	645.31	23.90
1340	1360	5	14	265.00	278.91	278.26	9.58	1.67	2.00	20.00	x	14.38	21.00	42.00	320.08	376.46	11.92	12	17.96	14.87	297.45	673.91	24.96
1360	1380	6	16	265.00	278.26	277.50	10.75	1.67	2.00	20.00		0.00	19.00	38.00	359.05	397.05	11.21	12	17.61	13.83	276.56	673.61	24.95
1380	1440	7	16	263.00	277.50	275.14	10.75	1.67	2.00	60.00	x	21.50	60.00	120.00	1077.15	1218.65	11.65	12	17.83	14.48	868.65	2087.30	77.31
1440	1500	8	14	261.66	275.14	272.78	9.58	1.67	2.00	60.00	x	12.84	60.00	120.00	960.25	1093.09	10.63	12	17.32	12.98	779.05	1872.14	69.34
1500	1540	9	14	259.50	272.78	271.20	9.58	1.67	2.00	40.00	x	20.70	41.00	82.00	640.17	742.87	10.82	12	17.41	13.26	530.36	1273.23	47.16
1540	1574.59	10	12	259.50	271.20	270.03	8.33	1.50	2.00	34.59		0.00	34.59	69.18	432.20	501.38	9.62	12	16.81	11.54	399.20	900.59	33.36
																6,484.8					4,739.7	11,224.6	415.7

Retaining Wall 3

General Information											Footing Volume						Stem Volume					Total Volume	
Station 1	Station 2	Section	Design H	Bottom Ftg Elev	Top of Wall 1	Top of Wall 2	W	F	Key	Section Length	Step at Begin?	Step Volume	Key Length	Key Volume	Footing Volume	Total Footing Volume	Average Real H	Top Thick	Bottom Thick	Stem Area	Stem Volume		
ft	ft		ft	ft	ft	ft	ft	ft	ft^2	ft		ft^3	ft	ft^3	ft^3	ft^3	ft	in	in	ft^2	ft^3	ft^3	CYD
1117.46	1160	1	8	278.50	287.90	287.81	7.25	1.33	0.89	42.54		0.00	41.54	36.92	410.19	447.12	8.03	12	16.01	9.37	398.46	845.57	31.32
1160	1255	2	10	276.00	287.81	287.62	7.58	1.33	0.89	95.00	x	18.13	95.00	84.44	958.15	1060.72	10.39	12	17.19	12.63	1200.02	2260.75	83.73
1255	1263.83	3	12	273.75	287.62	287.60	8.33	1.50	2.00	8.83	x	17.06	9.83	19.66	110.33	147.05	12.36	12	18.18	15.54	137.24	284.30	10.53
																1,654.9					1,735.7	3,390.6	125.6

Retaining Wall 4

General Information											Footing Volume						Stem Volume					Total Volume	
Station 1	Station 2	Section	Design H	Bottom Ftg Elev	Top of Wall 1	Top of Wall 2	W	F	Key	Section Length	Step at Begin?	Step Volume	Key Length	Key Volume	Footing Volume	Total Footing Volume	Average Real H	Top Thick	Bottom Thick	Stem Area	Stem Volume		
ft	ft		ft	ft	ft	ft	ft	ft	ft^2	ft		ft^3	ft	ft^3	ft^3	ft^3	ft	in	in	ft^2	ft^3	ft^3	CYD
1124	1180	1	8	278.38	288.10	288.10	7.25	1.33	0.89	56.00		0.00	55.00	48.89	539.98	588.87	8.39	12	16.20	9.86	551.96	1140.83	42.25
1180	1256	2	10	276.11	288.10	288.10	7.58	1.33	0.89	76.00	x	16.46	76.00	67.56	766.52	850.54	10.66	12	17.33	13.03	990.08	1840.62	68.17
1256	1266	3	12	274.00	288.10	288.10	8.33	1.50	2.00	10.00	x	16.00	11.00	22.00	124.95	162.95	12.60	12	18.30	15.91	159.08	322.03	11.93
																1,602.4					1,701.1	3,303.5	122.4

Retaining Wall 5

General Information											Footing Volume						Stem Volume					Total Volume	
Station 1	Station 2	Section	Design H	Bottom Ftg Elev	Top of Wall 1	Top of Wall 2	W	F	Key	Section Length	Step at Begin?	Step Volume	Key Length	Key Volume	Footing Volume	Total Footing Volume	Average Real H	Top Thick	Bottom Thick	Stem Area	Stem Volume		
ft	ft		ft	ft	ft	ft	ft	ft	ft^2	ft		ft^3	ft	ft^3	ft^3	ft^3	ft	in	in	ft^2	ft^3	ft^3	CYD
1332.96	1360	1	12	273.75	287.60	288.14	8.33	1.50	2.00	27.04		0.00	26.04	52.08	337.86	389.94	12.62	12	18.31	15.94	430.96	820.91	30.40
1360	1430.21	2	16	270.50	288.14	289.54	10.75	1.67	2.00	70.21	x	27.07	71.21	142.42	1260.45	1429.94	16.67	12	20.34	22.46	1576.87	3006.81	111.36
																1,819.9					2,007.8	3,827.7	141.8

Retaining Wall 6

General Information											Footing Volume						Stem Volume					Total Volume	
Station 1	Station 2	Section	Design H	Bottom Ftg Elev	Top of Wall 1	Top of Wall 2	W	F	Key	Section Length	Step at Begin?	Step Volume	Key Length	Key Volume	Footing Volume	Total Footing Volume	Average Real H	Top Thick	Bottom Thick	Stem Area	Stem Volume		
ft	ft		ft	ft	ft	ft	ft	ft	ft^2	ft		ft^3	ft	ft^3	ft^3	ft^3	ft	in	in	ft^2	ft^3	ft^3	CYD
1337.23	1345	1	14	274.00	289.40	289.42	9.58	1.67	2.00	7.77		0.00	6.77	13.54	124.35	137.89	13.74	12	18.87	17.67	137.32	275.21	10.19
1345	1400	2	16	270.42	289.42	289.59	10.75	1.67	2.00	55.00	x	34.31	56.00	112.00	987.39	1133.70	17.42	12	20.71	23.73	1305.34	2439.03	90.33
1400	1434.78	3	18	270.42	289.59	289.70	12.00	1.67	2.00	34.78		0.00	34.78	69.56	696.99	766.55	17.56	13	21.78	25.44	884.74	1651.30	61.16
																2,038.1					2,327.4	4,365.5	161.7

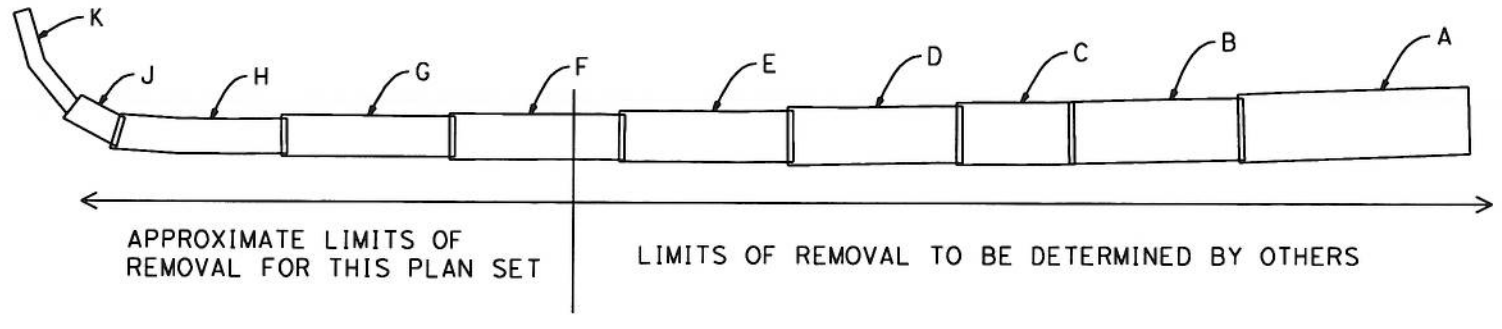
Existing Retaining Wall Dimensions and Removal Quantities

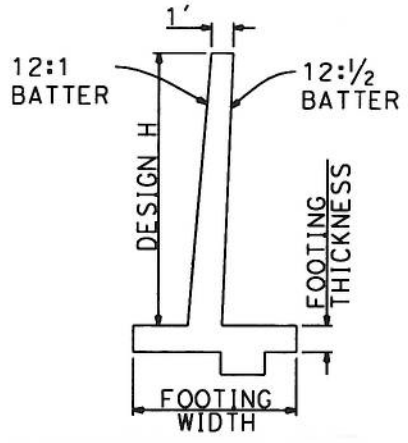
H	W	C	B	F	Key
8	5.17	1.67	3.50	1.17	0.89
10	6.17	2.00	4.17	1.17	0.89
12	7.17	2.33	4.83	1.17	2.00
14	8.00	2.67	5.33	1.17	2.00
16	9.00	3.00	6.00	1.17	2.00
18	10.00	3.33	6.67	1.17	2.00
20	11.00	3.67	7.33	1.33	2.00
22	12.00	4.00	8.00	1.50	2.00

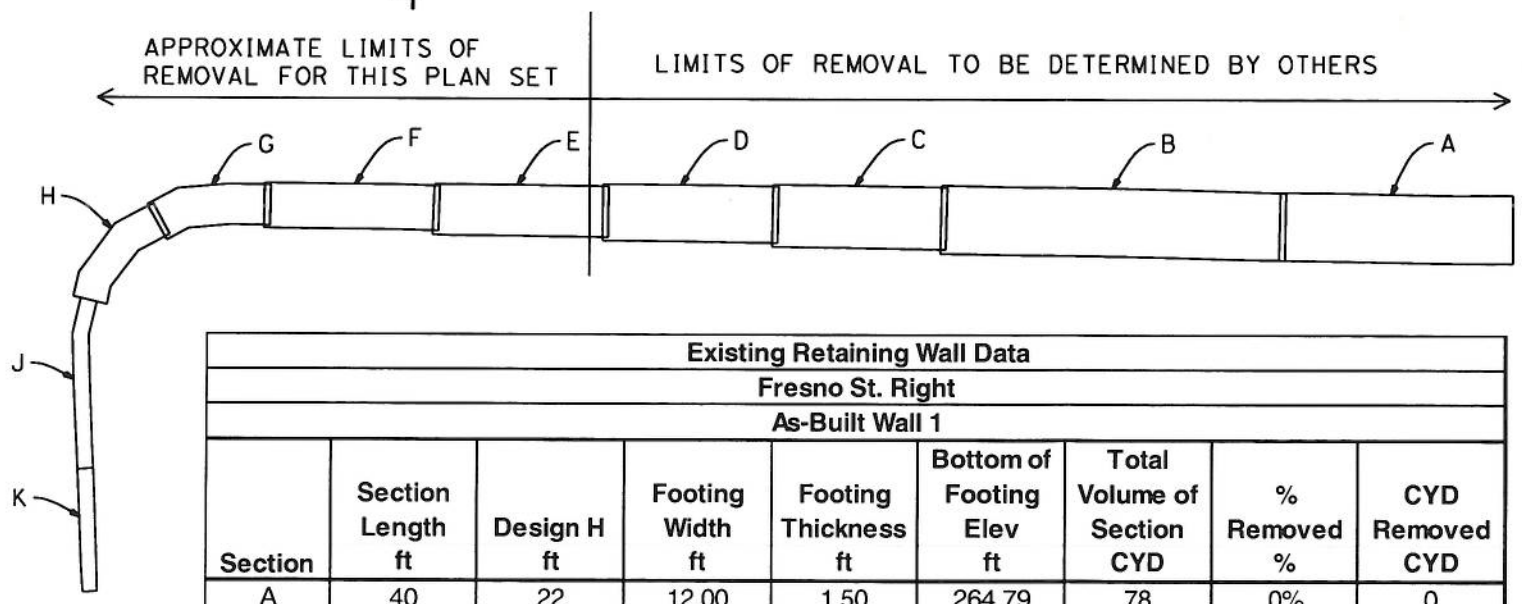
Wall 1 (Fresno St. Right)										-2.11	Footing					Stem			Total		Removal	
Section	Start	End	L	H	C	B	W	F	Bottom Footing	Conversion	Step At End	Step Volume	Key Length	Key Volume	Footing Volume	Footing Total	Top Thick	Bottom Thick	Stem Volume				
									ft	ft		ft^2	ft	ft^3	ft3	ft^3	in	in	ft^3	ft^3	CYD	%	CYD
A			40	22	4.00	8.00	12.00	1.50	266.90	264.79	x	27.60	41	82.0	720.0	829.6	12	23.0	1283.3	2113	78	0%	0
B			60	22	4.00	8.00	12.00	1.50	269.20	267.09	x	27.17	60	120.0	1080.0	1227.2	12	23.0	1925.0	3152	117	0%	0
C			30	20	3.67	7.33	11.00	1.33	271.67	269.56	x	17.60	30	60.0	440.0	517.6	12	22.0	850.0	1368	51	0%	0
D			30	18	3.33	6.67	10.00	1.17	273.43	271.32	x	17.10	30	60.0	350.0	427.1	12	21.0	742.5	1170	43	0%	0
E			30	16	3.00	6.00	9.00	1.17	275.33	273.22	x	16.80	30	60.0	315.0	391.8	12	20.0	640.0	1032	38	90%	34
F			30	14	2.67	5.33	8.00	1.17	277.43	275.32	x	12.90	30	60.0	280.0	352.9	12	19.0	542.5	895	33	100%	33
G			20	12	2.33	4.83	7.17	1.17	279.23	277.12	x	8.02	20	40.0	167.2	215.2	12	18.0	300.0	515	19	100%	19
H			20	10	2.00	4.17	6.17	1.17	280.53	278.42	x	17.08	20	17.8	143.9	178.8	12	17.0	241.7	420	16	100%	16
J			30						283.30	281.19	x									846	31	100%	31
K			20						285.00	282.89										248	9	100%	9
																						Total =	143

Wall 2 (Fresno St. Left)										-2.11	Footing					Stem			Total		Removal	
Section	Start	End	L	H	C	B	W	F	Bottom Footing	Conversion	Step At End	Step Volume	Key Length	Key Volume	Footing Volume	Footing Total	Top Thick	Bottom Thick	Stem Volume				
									ft	ft		ft^2	ft	ft^3	ft3	ft^3	in	in	ft^3	ft^3	CYD	%	CYD
A	551.13	591.13	40	22	4.00	8.00	12.00	1.50	266.70	266.70	x	29.37	41	82.0	720.0	831.4	12	23.0	1283.3	2115	78	0%	0
B	591.13	621.13	30	20	3.67	7.33	11.00	1.33	269.37	269.37	x	11.00	30	60.0	440.0	511.0	12	22.0	850.0	1361	50	0%	0
C	621.13	641.13	20	20	3.67	7.33	11.00	1.33	270.37	270.37	x	11.60	20	40.0	293.3	344.9	12	22.0	566.7	912	34	0%	0
D	641.13	671.13	30	18	3.33	6.67	10.00	1.17	271.53	271.53	x	13.50	30	60.0	350.0	423.5	12	21.0	742.5	1166	43	0%	0
E	671.13	701.13	30	16	3.00	6.00	9.00	1.17	273.03	273.03	x	16.00	30	60.0	315.0	391.0	12	20.0	640.0	1031	38	0%	0
F	701.13	731.13	30	14	2.67	5.33	8.00	1.17	275.03	275.03	x	12.90	30	60.0	280.0	352.9	12	19.0	542.5	895	33	70%	23
G	731.13	761.13	30	12	2.33	4.83	7.17	1.17	276.83	276.83	x	12.33	30	60.0	250.8	323.2	12	18.0	450.0	773	29	100%	29
H	761.13	791.13	30	10	2.00	4.17	6.17	1.17	278.83	278.83	x	11.37	30	26.7	215.8	253.9	12	17.0	362.5	616	23	100%	23
J	791.13	801.13	10	8	1.67	3.50	5.17	1.17	281.03	281.03	x	9.15	10	8.9	60.3	78.3	13	17.0	100.0	178	7	100%	7
K	801.13	801.13	20						282.80	282.80										569	21	100%	21
																						Total =	102

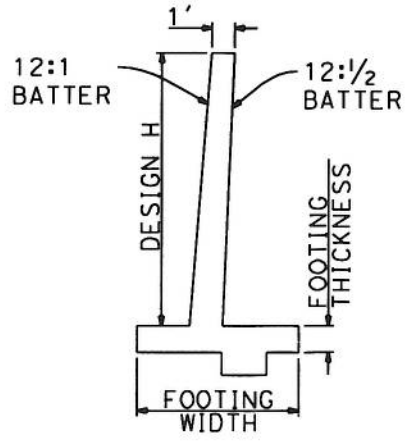
Existing Retaining Wall Data								
Fresno St. Left								
As-Built Wall 2								
Section	Section Length ft	Design H ft	Footing Width ft	Footing Thickness ft	Bottom of Footing Elev ft	Total Volume of Section CYD	% Removed %	CYD Removed CYD
A	40	22	12.00	1.50	266.70	78	0%	0
B	30	20	11.00	1.33	269.37	50	0%	0
C	20	20	11.00	1.33	270.37	34	0%	0
D	30	18	10.00	1.17	271.53	43	0%	0
E	30	16	9.00	1.17	273.03	38	0%	0
F	30	14	8.00	1.17	275.03	33	70%	23
G	30	12	7.17	1.17	276.83	29	100%	29
H	30	10	6.17	1.17	278.83	23	100%	23
J	10	8	5.17	1.17	281.03	7	100%	7
K	20	Gravity Wall			282.80	21	100%	21







Existing Retaining Wall Data								
Fresno St. Right								
As-Built Wall 1								
Section	Section Length ft	Design H ft	Footing Width ft	Footing Thickness ft	Bottom of Footing Elev ft	Total Volume of Section CYD	% Removed %	CYD Removed CYD
A	40	22	12.00	1.50	264.79	78	0%	0
B	60	22	12.00	1.50	267.09	117	0%	0
C	30	20	11.00	1.33	269.56	51	0%	0
D	30	18	10.00	1.17	271.32	43	0%	0
E	30	16	9.00	1.17	273.22	38	90%	34
F	30	14	8.00	1.17	275.32	33	100%	33
G	20	12	7.17	1.17	277.12	19	100%	19
H	20	10	6.17	1.17	278.42	16	100%	16
J	30	Gravity Wall			281.19	31	100%	31
K	20	Gravity Wall			282.89	9	100%	9



STATE OF CALIFORNIA – DEPARTMENT OF TRANSPORTATION

QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

SHEET 1 OF 2

JOB STAMP

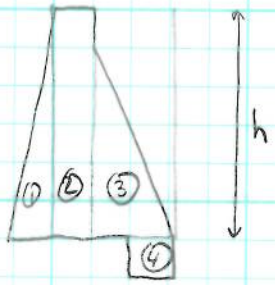
ITEM RW 1,2,3,4,5,6 | FILE NO.

LOCATION Bridge Removal | SEGREGATION YES ☐ NO ☐

CALC. BY R Melko | DATE 5/25/12

CHK. BY | DATE

Calculate Volume of J and K



① $\frac{1}{2}\, b\, h$ $\quad b = \frac{h}{12} \rightarrow \frac{1}{2}\frac{h^2}{12} = \frac{h^2}{24}$

② $1 \times h$

③ $\frac{1}{2}\, b\,(h-1)$ $\quad b = \frac{(h-1)}{12} \times 3 \rightarrow \frac{1}{2}\frac{3(h-1)^2}{12} = \frac{(h-1)^2}{8}$

④ 1×1

$$\text{Total} = \left(\frac{h^2}{24}\right) + (1 \times h) + \left(\frac{(h-1)^2}{3}\right) + (1 \times 1)$$

J → Average h

292 − 283.3 = 8.7'

290 − 283.3 = 6.7'

$$h_{avg} = \frac{(10)(8.7) + (20)(7.7)}{30} = 8.03'$$

K → Average h

290 − 285 = 5.0'

POSTED BY | DATE | POSTED TO

QUANTITY CALCULATIONS

DC-CEM-4801 (OLD HC-52 REV. 11/92) 7541-3520-0

JOB STAMP

ITEM RW 1,2,3,4,5,6 | FILE NO

LOCATION Bridge Removal | SEGREGATION YES NO

CALC BY RMelko | DATE 5/25/12

CHK BY | DATE

Volume

J → Total = $\left(\frac{8.03^2}{24}\right) + (1)(8.03) + \left(\frac{(8.03-1)^2}{8}\right) + (1)(1) = 28.19\ ft^2$

K → Total = $\left(\frac{5^2}{24}\right) + (1)(5) + \left(\frac{(5-1)^2}{8}\right) + (1)(1) = 12.38\ ft^2$

J → Volume = $(28.19)(30) = 845.7\ ft^3$

K → Volume = $(12.38)(20) = 247.6\ ft^3$

Well 2

K → h = 290.87 - 282.80 = 8.07

Area = Total = $\left(\frac{8.07^2}{24}\right) + (1)(8.07) + \left(\frac{(8.07-1)^2}{8}\right) + (1)(1) = 28.45\ ft^2$

Volume = $(28.45\ ft^2)(70') = 568.90\ ft^3$

POSTED BY DATE POSTED TO